

Good, Green, Safe, Affordable Housing

Urbact II Working Group Hopus brings together five universities and two city administrations, each working on different aspects of housing: from the urban to the building approach, from building regulations to construction technology, from environmental quality to energy certification: a multi-faceted and interdisciplinary vision, trying to cover a wide range of different problems, joining theory and practice. The challenge set out by the Leipzig Charter may seem vast; nevertheless, it is only through joint efforts that we can truly aspire to better new housing developments – good, green, safe, and affordable – which will eventually give birth to the cities we want for the future of our continent.

Good Green Safe Affordable Housing

Urbact II - Working Group Hopus

URBACT II - Working Group HOPUS
Housing Praxis for Urban Sustainability

Good
Green
Safe
Affordable
Housing

The Urbact II Operational Programme 2007-2013

Working Group Hopus

"Housing Praxis for Urban Sustainability"

**Good
Green
Safe
Affordable
Housing**



European Union

European Regional Development Fund



**European Programme
for Urban Sustainable Development**
www.urbact.eu

The Urbact II Operation Programme 2007-2013

Working Group HOPUS - Housing Praxis for Urban Sustainability

Good, Green, Safe, Affordable Housing

edited by Federico De Matteis

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www.iperedizioni.it

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ISBN: 978-88-6216-014-8

Finito di stampare nel mese di novembre 2008 presso Logo srl (PD), per conto di Iper testo Edizioni

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Housing Praxis for Urban Sustainability

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Good, green, safe, affordable housing A challenge for 21st Century Europe

In May 2007, the Council of European Ministers for Urban development set out the Leipzig Charter: an ambitious document for the future of our cities, advocating a new way of working on our environment. One year later, European cities face the task of bringing those propositions to life, providing higher-quality housing for more and more citizens, making access to affordable housing as simple as possible. In times of economic drought this might not prove easy: yet the real challenge consists in governing the economic forces which shape our cities, organising them through processes involving both public authorities and private stakeholders from the outset, reducing conflicts along the way.

Good housing is what shapes our cities, creating space and the quality to make them attractive places to live and work in.

Green housing is needed to mitigate environmental impact, reduce energy consumption, create buildings which interact more efficiently with the environment, and produce less pollution.

Safe housing is important to protect the wellbeing – both physiological and psychological – of its inhabitants, helping cities acquire that quality of life which makes them attractive places to live and work in.

Affordable housing is fundamental to guarantee the widest access to high-quality living to citizens of all income, by controlling the housing market, building costs and energy costs.

The aim of the Urbact II Working Group Hopus – Housing Praxis for Urban Sustainability – is exactly this: to study, disseminate and implement the ways through which new housing in Europe can be efficiently oriented, using modern governance tools such as design codes or other forms of “smart” project guidance.

Hopus brings together five universities and two city administrations, each working on different aspects of housing. From the urban to the building approach, from building regulations to construction technology, from environmental quality to energy certification: a multi-faceted and interdisciplinary approach, trying to cover a wide range of different problems, joining theory and practice.

The challenge set out by the Leipzig Charter may seem vast; nevertheless, it is only through joint efforts that we can truly aspire to better new housing developments – good, green, safe, and affordable – which will eventually give birth to the cities we want for the future of our continent.

Prof. Benedetto Todaro

Dean, Faculty of Architecture “Valle Giulia”
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“Sapienza” Università di Roma

Facoltà di Architettura “Valle Giulia”

È ormai nozione comune che, nello sviluppo urbano della città di Roma così come di molte altre urbanizzazioni italiane, la crescita dei nuovi quartieri residenziali di iniziativa privata rappresenti un punto di particolare problematicità. Esaurita l'epoca (e le risorse) dei grandi complessi pubblici, a fronte delle nuove espansioni ci si ritrova oggi ad apprezzare la perentorietà architettonica di luoghi urbani che, per lunghi decenni, sono stati considerati incapaci di generare vere forme di città. L'iniziativa pubblica, già minoritaria all'epoca dell'edilizia speculativa del boom economico, è ormai ridotta a briciole sul piatto dei “re di Roma”, una manciata di alloggi a fronte di milioni di metri cubi. È tornata l'era della palazzina: la scelta di modelli abitativi offerti sul mercato è ridotta all'osso, non più di tre o quattro tipologie iterate incessantemente perché garanzia di massimizzazione del profitto. Inutile sottolineare quanto la “delega” del pubblico al privato abbia influito negativamente sullo sviluppo di Roma nell'ultimo decennio, trasformando la città in una congerie di periferie blandamente aggregate intorno a centralità rappresentate da centri commerciali sovradimensionati.

Mentre in Italia si afferma questo stato di cose, nel maggio 2007 il Consiglio dei Ministri europei emanava la Carta di Lipsia, mirata a promuovere i modelli “virtuosi” per lo sviluppo integrato: la matrice di ispirazione è chiaramente tedesca, improntata alla crescita delle città sostenibili. I punti chiave della Carta di Lipsia sono la riqualificazione delle aree urbane degradate, l'importanza degli spazi pubblici, la modernizzazione delle infrastrutture, nonché la spinta verso l'integrazione delle strategie per la sostenibilità, il tutto considerato nell'ottica dell'inclusione sociale. Potrebbe sembrare poco, ma già rispetto a questo poco l'Italia marca il passo: qualsiasi paragone tra i quartieri pilota realizzati in molte nazioni europee e la massa dell'edilizia speculativa romana non può che ribadire la distanza sempre più aspra che ci separa dal raggiungere uno sviluppo urbano integrato. Pochi, sporadici e isolati sono gli esempi virtuosi nella città: certamente insufficienti per colmare il divario enorme tra le aspirazioni di quella che dovrebbe essere una grande capitale e le intenzioni di coloro che la stanno costruendo.

L'intento del Working group Hopus, nell'ambito del programma URBACT II, consiste dunque nello studiare l'applicazione e l'implementazione dei codici progettuali a livello europeo, individuando best practices relative alla realizzazione di interventi di edilizia residenziale. In particolare, è interessante mettere in luce quali siano i procedimenti più efficaci per garantire la massima applicazione di un codice progettuale. Nei contesti che già adottano comunemente questo tipo di strumento, il Design coding viene generalmente finalizzato a due obiettivi rilevanti sia per gli operatori pubblici che per i privati: 1) dato che in genere i master plan vengono sviluppati da più progettisti e/o imprese, anche in tempi dilatati, un codice di pratica può garantire l'omogeneità dei risultati; 2) per i soggetti privati, l'adozione di un codice di pratica significa generalmente una maggiore potenzialità commerciale dei risultati. Da un punto di vista economico, un codice progettuale non comporta maggiori investimenti nella fase di rea-

lizzazione, anche se chiaramente richiede maggiori tempi e costi in fase di programmazione, se non altro per la messa a punto del manuale stesso.

Sulla base di queste considerazioni, uno degli obiettivi primari del progetto Hopus consiste anche nell'indagare l'operabilità di un codice progettuale in una situazione quale si verifica a Roma. Il Design coding richiede una forte sinergia tra pubblico e privato; la collaborazione stretta tra moltissimi operatori nel settore pubblico e i centri di ricerca; la consapevolezza che esiste a tutti gli effetti un margine di crescita della qualità dei quartieri residenziali che non va a intaccare gli interessi economici. Che un'interazione virtuosa tra tanti e tanto diversi soggetti sia oggi possibile alle nostre latitudini è tutto da dimostrare; rimane il fatto che, rispetto alla qualità media dei nuovi quartieri residenziali cui ci sta abituando l'architettura europea, utilizzando semplicissimi strumenti e molto buon senso, quanto avviene oggi in Italia sembra essere la testimonianza di un profondo dissesto culturale.

Il progetto Hopus avrà una durata biennale; durante questo periodo, attraverso la rete europea, la disseminazione delle best practices e le azioni di supporto locale, tenterà di mettere a fuoco le potenzialità ed i limiti del Design coding, con l'aspirazione a comprendere come uno strumento di questo genere possa portare maggiore qualità alle nuove periferie romane.

Delft University of Technology

Onderzoeksinstituut OTB

Het Onderzoeksinstituut OTB (www.otb.tudelft.nl) is een interfacultair onderzoeksinstituut binnen de Technische Universiteit Delft en gespecialiseerd in onafhankelijk onderzoek en advies op het gebied van wonen, bouwen en de gebouwde omgeving. Het Onderzoeksinstituut OTB onderscheidt zich door de combinatie van wetenschappelijk en toegepast onderzoek. De kernactiviteiten van het Onderzoeksinstituut OTB zijn:

- wetenschappelijk onderzoek
- onderzoek in opdracht van derden
- beleidsadvisering en kennisoverdracht in onderwijs, publicaties, cursussen en studiedagen.

Sectie Duurzaam Woningvoorraadbeleid en Kwaliteitszorg (OTB, TU Delft) richt zich op woningvoorraadbeleid, kwaliteitszorg en duurzaam bouwen en beheren. Hierbij staan de fysieke kenmerken van de woningsector centraal. Strategische afwegingen, kwaliteitsbeheersing en -sturing, certificering en prestatieconcepten zijn belangrijke aandachtspunten. Het onderzoeksveld van de sectie is verdeeld naar drie centrale thema's:

- duurzaam en gezond wonen
- strategisch woningvoorraadbeleid en technisch beheer
- bouwregelgeving en kwaliteitszorg

De Sectie Duurzaam Woningvoorraadbeleid en Kwaliteitszorg werkt aan een nieuw onderzoeksprogramma Housing Quality and Process Innovation (HQPI). De missie van HQPI is, om fundamenteel, strategisch en toegepast wetenschappelijk onderzoek uit te voeren op het gebied van 'procesinnovatie, ter verbetering van de woningkwaliteit in termen van veiligheid, gezondheid, bruikbaarheid, energiebesparing en duurzaamheid vanuit het oogpunt van het milieu'. Doel van HQPI is het om wetenschappelijke bijdragen te leveren op grond van technische inzichten, de ontwikkeling van effectieve en efficiënte processen, almede innovaties op het gebied van beleid, wet- en regelgeving en tools, die bijdragen aan de kwaliteit van de nieuwe en de bestaande woningvoorraad. Het programma omvat promotie, postdoc en praktijk onderzoek.

Binnen HQPI zal het Onderzoeksinstituut OTB samenwerken met betrokken actoren bij de kwaliteitsslag binnen de woningvoorraad, waaronder woningcorporaties, gemeenten, energie- en bouwbedrijven. Het OTB werkt hierbij nauw samen met grote gemeenten als Den Haag, Rotterdam en Utrecht, welke bij de Local Action Groups betrokken kunnen worden. Lokale actie plannen kunnen de vorm hebben van convenanten tussen gemeenten en woningcorporaties, waarin prestatieafspraken m.b.t. CO₂ reductie door energiebesparing en gebruik van hernieuwbare bronnen etc. worden vastgelegd. Een onderzoeksproject concentreert zich op de gemeentelijke positie in het energietransitie proces van de woningvoorraad bij nieuwbouw en renovatie. Hierin worden lokale klimaatambities en energiereductie strategieën voor de woningvoorraad onderzocht, evenals het ontwikkelde beleidsinstrumentarium, en worden effecten hiervan op de reductie van het energieverbruik en van CO₂-emissies in de woningbouw geëvalueerd. De ontwikkeling van een design code krijgt hier specifieke aandacht.



Universidade do Minho

Universidade do Minho

Departamento de Engenharia Civil

Em Portugal, as preocupações energéticas nos edifícios são relativamente recentes. O primeiro regulamento na área surge em 1990 com um grau de exigência reduzido no que diz respeito aos consumos energéticos, sendo a tónica posta no aumento do conforto no interior dos mesmos, dadas as pobres condições que se verificavam na esmagadora maioria dos edifícios residenciais. No entanto, para dar cumprimento às exigências da Directiva Europeia EPBD, três novos regulamentos foram publicados em Abril de 2006 relacionados com a certificação energética dos edifícios, que tem vindo progressivamente a ser implementada, primeiro para edifícios novos de grandes dimensões, depois para todos os edifícios novos e, a partir de Janeiro de 2009, para todos os edifícios. Neste contexto, a grande maioria dos edifícios residenciais apresenta um fraco desempenho energético, sendo este um dos grandes problemas evidenciados pelo parque edificado português e para o qual se procuram soluções.

No que se refere à Construção Sustentável, não há de momento quaisquer regras ou códigos construtivos que orientem o sector da Construção no sentido de construir edifícios eficientes e que produzam pouco impacto ambiental. No entanto, ultimamente tem-se assistido a uma tomada de consciência global para as questões ambientais o que tem levado os Municípios e algumas empresas do Sector da Construção a procurar novas soluções ambientalmente sustentáveis. Têm surgido, por isso, medidas de carácter voluntário por parte desses organismos que visam promover a Construção Sustentável. Contudo, há uma enorme falta de conhecimento sobre o tema, felizmente associada a uma forte vontade de aprender, o que tem levado também algumas universidades a desenvolver esforços no sentido de elaborarem regras e manuais que permitam um acesso simples à informação por parte de todos os actores envolvidos.

Neste contexto, é urgente desenvolver regras, manuais de boas práticas e novas soluções, que permitam dar resposta às crescentes necessidades do Sector e que sejam um ponto de partida para o estabelecimento de novos códigos construtivos. É aqui que surge a Universidade do Minho, suportado pelo Grupo de Apoio Local que, tirando partido da sua experiência neste domínio, tentará dar resposta às muitas necessidades já expressas pelos vários intervenientes neste Sector.



Politechnika Gdańska

Wydział Architektury

Projekt Hopus dotyczy możliwości zastosowania opracowań urbanistycznych typu design coding jako narzędzia planistycznego podnoszącego jakość zabudowy mieszkaniowej w urbanizowanych terenach podmiejskich. Jakość rozumiana jest tu w sposób złożony: harmonia urbanistyczna oraz obniżanie kosztów eksploatacji struktur mieszkaniowych poprzez zastosowanie rozwiązań proekologicznych. Temat ten jest w szczególności sposób ważny w Polsce, w której kryzys kultury planowania przestrzennego jest problemem rozwojowym. Ustanowienie obowiązku sporządzania świadectwa charakterystyki energetycznej (Dyrektywę UE 2002/91/EC) to krok w kierunku ustanowienia w Polsce wyższych standardów dla zabudowy mieszkaniowej. Kwestia użycia narzędzi urbanistycznych do poprawy energetycznej efektywności zabudowy wysuwa się w Hopus na plan pierwszy. Prace nad projektem nastawione są na wymianę i promocję współczesnej wiedzy wśród projektantów, inwestorów prywatnych, ale głównie władz samorządowych odpowiedzialnych za tworzenie lokalnych przepisów regulujących zasady zabudowy. Wyniki projektu przysłużą aktualizacji polityki przestrzennej zarówno regionalnej jak i komunalnej nie tylko w obszarze metropolitalnym Trójmiasta.

W ramach Hopus w okresie wrzesień 2008 – kwiecień 2010 pracować będzie zespół badawczy Politechniki Gdańskiej wspomagany przez Lokalną Grupę Wsparcia składającą się z przedstawicieli: władz regionalnych (Urząd Marszałkowski Województwa Pomorskiego), władz samorządowych z trzech odmiennych ośrodków położonych w obszarze metropolitalnym Trójmiasta: Miasto Gdynia, Miasto i Gmina Kartuzy, Gmina Pruszcz Gdański, organizacji zawodowych projektantów: Pomorska Okręgowa Izba Architektów, Towarzystwo Urbanistów Polskich odd/Gdańsk oraz środowiska inwestorów z branży mieszkaniowej działających w obszarze metropolitalnym Gdańska: Grupa Inwestycyjna HOSSA SA, ING REAL ESTATE POLAND, PANORAMA DEVELOPMENT Sp. z o.o.

Realizacja założeń Hopus określona została w Lokalnym Planie Działania i nastąpi poprzez:

1. stworzenie nowego, interdyscyplinarnego zespołu badawczego specjalizującego się w problematyce planowania przestrzennego i proekologicznych rozwiązaniach techniczno-infrastrukturalnych, działającego również po zakończeniu projektu. Zespół ten pracować będzie nad zebraniem problematyki projektu oraz opracowaniem go w sposób umożliwiający popularyzację,
2. stworzenie grupy konsultacyjnej złożonej z przedstawicieli głównych podmiotów wpływających na charakter przestrzeni podmiejskiej, współpracującej nad opracowaniem raportu o możliwościach wdrożenia wyników, istnieje potencjalna możliwość utrzymania grupy jako nieformalnego ciała doradczego po zakończeniu projektu,
3. opracowanie raportu o możliwościach wdrożenia wyników, służącego jako materiał

- pomocniczy kształtowania polityki regionalnej,
4. organizacji międzynarodowej konferencji naukowej,
 5. organizacji cyklu szkoleń dla projektantów i samorządowców,
 6. organizacji międzynarodowych warsztatów studenckich służących wypracowaniu wspólnego nowego interdyscyplinarnego programu nauczania przedmiotu z zakresu Hopus,

Popularyzacja wyników:

- a. seria publikacji na temat problematyki Hopus w biuletynach i stronach internetowych członków Lokalnej Grupy Wsparcia, w periodykach fachowych dla projektantów i samorządowców,
- b. publikację poradnika w języku polskim dotyczącym problematyki Hopus, podsumowujących wyniki raportu, konferencji międzynarodowej i innych konsultacji,
- c. międzynarodową publikację w języku angielskim podręcznika.



DASTEC

Dipartimento di Arte, Scienza e Tecnica del Costruire

Università "Mediterranea" di Reggio Calabria

DASTEC - Dipartimento di Arte, Scienza e Tecnica del Costruire

Il patrimonio edilizio esistente oggetto di studio è caratterizzato da elevati consumi energetici e impatti ambientali conseguenti. Ciò è dovuto all'utilizzazione di scelte di progetto e tecnologie che non pongono la doverosa attenzione alle caratteristiche complessive del contesto d'insediamento. La questione della necessaria revisione dei processi gestionali e delle modalità costruttive diventa l'obiettivo strategico della ricerca proposta. In tal senso, i piani d'azione locali, le norme tecniche e i regolamenti edilizi potrebbero quindi dettare la linea per tutti gli interventi sull'edilizia esistente e di nuova costruzione tesa alla riduzione dell'intensità energetica e ambientale del settore edilizio con innegabili ricadute sulla qualità dell'ambiente urbano.

La definizione di strumenti destinati ad enti pubblici e a soggetti privati, trova ampio riscontro nella richiesta di codici e protocolli utili al supporto decisionale per l'indirizzo delle azioni di sostenibilità urbana ed edilizia.

Per il Dastec, gli obiettivi specifici del programma consistono in:

- Costituzione di network tra enti di ricerca, di programmazione, portatori d'interesse e imprese locali del settore delle costruzioni.
- Definizione di un piano d'azione locale aderente all'esigenze emerse dall'analisi dello stock edilizio esistente del territorio Reggino, orientato agli obiettivi di sostenibilità ambientale ed energetica.
- Validazione del metodo (codice di progettazione) in rapporto all'iter costitutivo delle buone prassi.

Tali obiettivi saranno realizzati, di concerto con i soggetti costituenti l'LSG, attraverso la definizione del piano di azione locale, che definisce ruoli e finalità delle attività:

- l'U.O. del Dastec elabora il "metodo", definisce il repertorio di tecniche e materiali e li valuta in modelli (mock up) presso i propri laboratori;
- il Comune di Reggio Calabria offre il manufatto edilizio dove espletare la sperimentazione, orienta le attività secondo le osservazioni degli Uffici Tecnici di settore.
- Confindustria, ANCE, e ESEFS offrono mezzi, competenze e maestranze per la sperimentazione del modello.
- Innovareggio e CISER collegano e gestiscono le informazioni, organizzano le attività di diffusione e disseminazione e fanno il marketing territoriale dell'iniziativa.
- la Provincia di Reggio Calabria e gli Ordini Professionali partecipano alle attività di disseminazione e veicolano la informazioni delle attività.

Un primo livello di supporto fornito da ciascun soggetto del LSG riguarderà la costruzione dell'analisi dello stato di fatto, ovvero l'individuazione delle problematiche connesse alle prestazioni energetiche dell'edilizia attraverso una ricognizione:

- del quadro normativo di riferimento (locale e nazionale);
- delle modalità e delle tecniche costruttive in uso a livello locale;
- l'individuazione di descrittori utili delle prestazioni ambientali ed energetiche dell'edilizia residenziale.



Comune di Reggio Calabria

Settore Urbanistica e Pianificazione Territoriale

La revisione della Commissione Europea del Quinto Programma d'Azione Ambientale sottolinea il ruolo decisivo svolto dalle iniziative locali per la promozione e l'attuazione dell'Agenda 21 locale. La Carta europea delle città sostenibili afferma che lo sviluppo sostenibile aiuta le città a basare i livelli di vita sulla capacità di carico naturale, mentre cerca di raggiungere la giustizia sociale e la sostenibilità economica, sociale ed ambientale.

La Città di Reggio Calabria, facendo propri questi assunti e aderendo alle Carte Programmatiche, ha indirizzato le proprie politiche, alle scale del territorio, urbana ed edilizia, verso il miglioramento complessivo della qualità della vita nell'ambiente naturale e costruito.

A testimonianza di quest'approccio, e nell'intento di conciliare la ricerca della sostenibilità con le aspettative dei cittadini coniugando l'efficienza ambientale con l'efficienza sociale, l'Amministrazione ha istruito alcuni strumenti di programmazione ed attuazione tra cui:

- Il Piano di Sviluppo Urbano;
- Il Piano Strutturale Comunale;
- Il Piano Strategico, in particolare le Linee 2 "Reggio Calabria città per vivere" e 4 finalizzata a promuovere e realizzare progetti di ricerca scientifica e tecnologica internazionali;
- I Programmi di Riqualficazione Urbana come il PIC Urban, il RIURB ed Contratti di Quartiere I e II.

In questa luce, l'Amministrazione ha individuato nella gestione orientata del proprio patrimonio edilizio un anello strategico della nuova "filiera qualitativa" urbana: intende quindi avviare una serie d'iniziative tese a percorrere tali strategie. In primo luogo individua nella istruzione di nuove procedure di supporto alle decisioni un utile strumento operativo che può innescare una duplice linea innovativa. Da un lato formare le proprie risorse umane secondo la chiave della sostenibilità edilizia, dall'altro fornire strumentazioni tecniche che orienteranno gli interventi sul patrimonio stesso. In più si ritiene che tali "codici", oltre alle positive ricadute sulle azioni da parte di tutti gli attori territoriali del settore, possano diventare delle basi sulle quali costruire il nuovo regolamento edilizio comunale allegato al PSC. È infatti indubbio quanto uno strumento attuativo che interiorizzi i paradigmi dell'eco-efficienza agevoli lo sviluppo dell'intero processo rivolto al miglioramento della qualità della vita di tutte le utenze cittadine. Tra le iniziative che questa Amministrazione ha individuato come utile riferimento, il programma URBACT II è sembrato dalle prime risultanze tra quelli che potevano aiutare in maggior misura il percorso innovativo dell'edilizia esistente. È quindi per queste ragioni che l'Amministrazione ha inteso partecipare al progetto Hopus, intravedendo nei risultati attesi un fertile strumento di garanzia e supporto all'insieme delle nuove politiche che la Città vuole mettere in atto entro il 2013.

Sheffield City Council

Sheffield is a post-industrial city in the north of England which is undergoing a process of reinvention and transformation of far reaching effect. The city centre is undergoing regeneration (1) and this momentum is now reaching out to the neighbourhoods and in particular Housing Market Renewal (2) (HMR) areas in the north, east and south where large areas of clearance exist. The key aim for the neighbourhoods is to develop sustainable communities (3).

Sheffield City Council's output for the Hopus project is the production of the Sheffield Residential Design Guide (RDG). This will be offered for use by the Lead Partner as a case study in the project.

The RDG is a neighbourhood and housing design guide for Sheffield. It is intended as a Supplementary Planning Document which will then be part of the Sheffield Development Framework (4) and will be referred to in determining the acceptability of planning applications for new residential development.

The aim of the RDG is to support the local development framework in creating more sustainable, distinctive and attractive neighbourhoods that contribute to the overall success of the city. The RDG will be used by developers, as well as planning officers, in guiding the preparation of development proposals, as well as the justification for decision making.

Sheffield is a city characterised by its landscape: its topography, rivers, parks and open spaces, tree cover, and access to the countryside: and part of Sheffield's vision is to be 'an attractive, sustainable low carbon city' and to optimise the value of design quality to achieve this end. These twin objectives illustrate the importance of delivering high quality residential development that particularly helps to support the landscape character of the city and that which performs to high environmental standards. These are two areas that developers have historically struggled to perform well on.

The work, currently being undertaken, is developing an understanding of the landscape and urban characters as well as the human factors that form distinctive places around the city. The work will consider approaches to coding to retain or enhance the existing distinctiveness and sustainability of neighbourhoods.

(1) Sheffield City Centre Masterplan:

<http://www.creativesheffield.co.uk/DevelopInSheffield/CityCentreMasterplan>

(2) Housing market renewal is a programme to rebuild housing markets and communities in parts of the North and the Midlands where demand for housing is relatively weak and which have seen a significant decline in population, dereliction, poor services and poor social conditions as a result. For further information refer to: <http://www.communities.gov.uk/housing/housingsupply/housingmarketrenewal/>

(3) In line with the UK Government's work to create thriving, vibrant, sustainable communities that will improve everyone's quality of life. A sustainable community is a place where people want to live and work now and in the future. For further information refer to: <http://www.communities.gov.uk/communities/sustainablecommunities/>

(4) The Sheffield Development Framework:

<http://www.sheffield.gov.uk/planning-and-city-development/planning-documents/sdf>

1

1. Housing and Integrated Urban Development

A large part of the present development of European cities is vehicled by the expansion of residential areas. Scarce public funding in recent years has increasingly led to delegating private subjects the responsibility over new developments, with public authorities exercising only a timid control of operations. This has in turn led to a decline in overall urban and architectural quality, under the pressure of speculative interests. With different declinations, this process can be recorded throughout the European area.

The new challenges of sustainable urban development, as synthesised in the Leipzig Charter, demand greater integration between public and private subjects. Sustainability is not achieved by improving building quality or by optimising public transport alone. The transversal nature of the challenge requires a thorough rethinking of the way public and private can work together, achieving quality without jeopardising economic interests.

How can a more streamlined and efficient process be achieved? In the first place, it is a question of bringing together many different aspects of contemporary cities: the way they grow and evolve, how development can be managed in a balanced public-private relationship, how the fundamental issues of sustainability are to be integrated into the planning and design process.

1.1 Housing contemporary Europe

The principles of urban governance arise from the current economic and social dynamics of cities, which have long since transcended any possibility of being centrally controlled by public authority. Centralising control and management would signify imposing unlikely restraints on the dynamics of development. Nevertheless, this does not imply abandoning any form of control over the transformations which take place within the urban environment.

In order to pursue a balanced, integrated, and sustainable development of cities, public authorities must take up their role as “tutors” of the private initiatives, sparking and promoting the necessary processes of management and negotiation between different subjects and stakeholders. Although regulations must be brought to be more inclusive

and flexible, the public sector must guarantee that, in face of greater concessions, the private should aim at achieving levels of urban and architectural quality rising above minimum standards. This greater economic engagement must not be perceived as an obligation by private investors, but rather as an added value which can be of benefit for private economic interest, most of all for the public good, enhancing the quality of life of citizens.

Private housing developments, in order to be effectively part of processes of integrated urbanism, should be subjected to such balanced modalities of control, where private initiative is “tempered” by public control. Although the individual buildings and dwellings are private, the city and urban fabric they form is part of the public domain: they are endowed with a double nature, making them the ideal ground for the implementation of urban governance.

Traditionally, housing developments have represented the basic “building block” of modern European cities. 20th century public housing estates have to a good extent shaped the urban form of expansions rising around the inner core of cities, through large-scale interventions advocating various forms of collective aggregation. Private developments, on the other hand, have generally adopted a less collectivist ideal, settling for a more fragmented and individualist model, where the single-family house rising on a small plot of suburban land has long represented an optimal architectural as well as economic standard.

In different ways, both public and private undertakings favoured the harsh urban fragmentation we witness today. Large public estates severed the natural integration of functions by relocating residential areas away from city centres; private developments sprawled far into the natural landscape. This centrifugal movement has often deprived city cores of basic complementary functions, turning them into neglected areas. Inner-city revitalisation processes have been carried out throughout Europe over the last two decades, and more are under way: today city centres are in the process of being returned to a more balanced urban role, whereas the problems of suburbs are still largely to be solved. This is one of the reasons for the Leipzig Charter’s emphasis on



Unregulated, low-density development characterises many European cities today. Above, urban sprawl in the eastern outskirts of Rome

the renovation of housing stock, which is not to be intended under environmental aspects only.

Integrated urban development policies mean to prevent today's cities from incurring in the same mistakes as in the past. It intends to bring together urban planning, architectural design, building technology, ecology, economics, and social factors. In one word, integrated urban development creates space: for space, beyond its quantitative or aesthetic meanings, has traditionally been the cultural expression of all these aspects of society.

This must prove consistent with the spirit of the European Commission's "Towards a Thematic Strategy on the Urban Environment" interim communication, and the subsequent documents on sustainable development where "Buildings and the built environment are the defining elements of the urban environment. They give a town and city its character and landmarks that create a sense of place and identity, and can make towns and cities attractive places where people like to live and work. The quality of the built environment therefore has a strong influence on the quality of the urban environment but this influence is much deeper than purely aesthetic considerations."

1.2 Managing today's cities: urban governance and sustainable development

After 2001, in the EU governance has been the base of several international and local debates, projects and experimental applications. Governance contents and rules expanded themselves onto different contexts and geographical scales. At the moment governance is a fundamental instrument to realise the sustainable development and competitiveness, including the relationships with citizens and citizenships.

These last ones transformed governance in a "bottom-up" process, changing the State institutional role from centralist and "top-down" to community tutor, social dynamics' regulator. This has permitted to obtain greater degrees of freedom in the public management and to assume positive initiatives for the sustainable, balanced and cohesive development, looking, at the same time, at the quality of projects. For this, recently, some ethical principles were integrated onto the public institutional action.

Urban and metropolitan socioeconomic governance has become a central topic of the new European territorial processes and 'good governance rules' are required and fixed in advance to make sustainable and competitive territorial planning. In this context, a precise operative mission is assigned to the sub-regional and municipal private and public actors: to catch up the local potential territorial cohesion and to offer polycentric endogenous solution, by territorial and municipal planning.

By governance we mean an approach allowing for a spontaneous development of a territory or city potentials, exploiting its internal resources through the choice of shared projects and rules started by the public management ability in creating a competences/resources network among all concerned parties. Governance therefore means a set of rules, which, acting according to the urban and territorial governance, contribute to build and achieve the strategic planning goals. The application of these procedures does not precede or follow the planning choices, but rather proceeds concurrently with them right from the beginning, thus determining the choice of a technical-political

work methodology that ensures the transparent and effective behaviour of the parties involved for the achievement of the (public and private) goals, up to the final fulfilment of a policy, programme, and planning.

Since 2000, the stages of a territorial good governance process, in support of choices of competitive development in sustainability, have been identified as follows:

- Identification and co-ordination of involved actors into policies, plans and programs of development for territory organisation and management;
- Analysis of the modalities according to which the changes in the decisional processes (rules of governance) are produced;
- Pinpointing and assessment of best practices to implement and manage policies, programmes and planning in relation to a beforehand development (1). In fact, the public management contents in the governance perspective were: centrality of the interactions with the players at different levels; social networks management and coordination; direction towards the economic-social milieu.

On the contrary, concepts of governance and public management – corollary to sustainable development for territorial competitiveness – imply the outgrowing of conventional coordination issues. They refer to transversal policies asking for participation and activeness of agency, either institutional or not, in order to achieve an integrated management that goes beyond usual administrative responsibilities.

The 'good governance' logic, exceeding in evolutionary terms the government perspective, enhances flexible guidance and new ways of sharing and propelling territorial administration. Thus coordination is highlighted at the lower subsidiary administrative levels, as well as better integration between local demand and supply policies, through the development of necessary new instruments (regulations, voluntary agreements). This approach towards an integrated and complex management of the governance is based upon a European federalist perspective and does not necessarily require the creation of new structures, which could otherwise multiply the institutional levels (in the meantime reducing their powers) and create conflicts with the pre-existent apparatus. Public governance opens to network management, as well as the consultation and coordination bodies these new modalities of relationships are built through, but does not offer any standard solution. That is the reason why public actors play (almost exclusively) the role of starting engine for development. The main goal of governance lies in the detection and analysis of the interaction among governments and the social and productive players concerned. Therefore, as OECD already observed, local and global open forums promote exchanges in the perspective of comparative analysis and evaluative benchmarking (2).

The push in favour of territorial public governance – also intended as public service offer – is getting stronger and stronger, due to pressure coming from globalism and new technologies. In this new context the terms "government" and "welfare" are no longer able to define how citizenships and territories are organised and managed. "Governance" is a better term to explain the process through which the citizens address their needs, using government as an instrument.

Metropolitan areas have emerged as the "optimal environment" for the achievement of such change. In order to be competitive at the global level, and at the same time cooperative in choosing quality life as a main goal at local scale, MEGAs, capital cities

and urban regions are key factors for cohesion, which competitiveness has to spring from. In this way the structures of territorial governance must be able to manage both the environmental variable as originator of life quality, and the chance for development and management of the economy.

Implementing territorial governance at a particular level does not only mean to reform institutions, but also to plan the culture of governance: substituting the top-down rules of territorial planning administration with new typological and participated forms, and opening decisional and managerial processes to new players (stakeholders) with a legitimate position. Market forces alone cannot guarantee the integration of a territory's environmental, social and economic relationships; therefore the capability is needed to create favourable conditions for a sustainable development through governance for the management of their right balance.

Circumstances where governance assumed a primary role have been defined as a result of important experiences in 3rd and 4th generation urban and territorial Strategic Plans (3). Some recurring features common to both typologies can be considered:

- integration of economy into urban or territorial restructuring (value retrieval through dismantled industrial areas renovation, financing infrastructure projects, partnerships in projects to reorganise public utility networks, etc.);
- greater participation of (public and private) "players" contributing to intervention choices and urban policies definition;
- definition of new and up-to-date mechanisms of agreement about best instruments for projects discussion, preventive assessment and implementation, as well as for the achievement of investments' high level of effectiveness/efficiency and return.

These experiences confirm governance as a system to arrange differences, whereas the main urban area plays the role of competition engine and, at the same time, of socio-economic organiser of the cooperation network of the territories involved. The presence of an up-to-date and innovative contractual framework (agreement progress) meets the governance criteria, thus administrations, where there is no such structure, have to intervene beyond the technical aspects of the administrative management of contracts and agreements, bringing the choices inside the governance rules range.

The urban, metropolitan, territorial governance ask for their own milieu in order to be ready to accept coordinated actions that are able to show a co-planning and co-operative will. This implies a pre-existent regulatory action capable of creating or consolidating values (economic, social, cultural, environmental) around a project/idea, while identifying the governance action recipients, that is the subjects who are eligible to claim a right of gaining access to the value (the stakeholders).

Nevertheless the possibilities that governance offers seem to be the only ones capable of developing new best practices into local administrations of urban and metropolitan areas. At present, partnership is the means to achieve these goals, a formal organisational structure or multi-agency, aiming at the strategic policy making declared in form of local political agenda (e.g. the local Agenda 21 for the cities).

1.3 The European perspective on the urban environment and energy

From its very foundation act, the EU has placed at the centre of its institutional mission governance and the promotion of “a harmonious, balanced and sustainable development of economic activities, (...) a high level of protection and improvement of the quality of the environment, the raising of the standard of living and quality of life” (4) of its citizens; and, even more explicitly, “Environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities referred to in Article 3, in particular with a view to promoting sustainable development” (5).

Starting from the **Green Paper on the Urban Environment** (1990) (6) and the **Rio Declaration** (1992), which was immediately received by the EU, to the more recent directives on climate change (7) and on sustainable development strategies (8), the EU has supported and oriented normative action of member states by giving multi-level indications promoting innovative policies of sustainable development. More recently, this trend has been consolidated and expanded by including the urban environment, the energy market and transport.

These issues are tightly connected to the control of global environmental conditions and the overseeing of the stability of energy markets and economic, social and ecologic development of urban areas. With the recent Commission’s strategy to improve the environmental performance of Europe’s urban areas, urban development is put at the centre, in delivering the objectives of the EU Sustainable. “Cities are where many environmental problems are concentrated, but they are also economic drivers, the places where business is done and investments are made. Four out of five European citizens live in urban areas, and their quality of life is directly influenced by the state of the urban environment. A high quality urban environment also contributes to the priority of the renewed Lisbon Strategy to ‘make Europe a more attractive place to work and invest’” (9).

The promotion of building energy performance brings together all components of energetic, environmental, economic and social sustainability. Improved building performance not only benefits the built environment and the CO₂ emissions of the whole productive line, but also the social and economic conditions of users and health level of the entire building sector.

Among the most important normatives for the building sector, EU directive 2002/91 on building energy performance (10), has sparked the creation of a European platform for building, the **EPBD Buildings Platform** (an information service for the implementation of the directive) and the **Intelligent Energy – Europe** Programme.

At national level, directive 2002/91 requests member states to set out regulation to define methods and parameters for the evaluation and assessment of building energy performance. EU policies have allowed the development of operational projects and programmes (11), which are among the most important vectors of technological innovation, although they have not always led to a true modernisation of national institutions managing the implementation of these policies.

All EU programs promoted on the overall system of Sustainable development, Energy and Urban environment aim at promoting new strategies in urban and architectural design to reduce emissions. These range from sustainable mobility, to the renovation

of existing housing stock, to new settlement strategies to minimise emissions, to the exchange of knowledge and best practices. Nevertheless, many of these programmes still find resistances in the inertia of local governance systems, putting at stake many research and implementation efforts. This is exemplified by the difficult implementation of the Kyoto Protocol (12).

1.4 Affordable housing and the question of quality

New housing developments must thus gather the challenge of defining, to a great extent, the quality of growing cities. In order for this to happen, planning processes should guarantee the correct spatial organisation of functions and urban structures, assigning specific qualities at the territorial level. If this strategic planning level is successful, subsequent master plans for developments will have greater chance of being effectively integrated within the overall urban system. New developments must also engage the landscape, be it natural or man-made, fostering the preservation of this invaluable asset.

Over the last decades, social housing programmes have dwindled throughout Europe, with few exceptions. In many situations, the availability of public housing stock is in a 1:10 relationship in respect to private developments; in other cases, social housing programmes are altogether absent. Private initiative has certainly contributed to the provision of affordable housing, given the public sector's ever-decreasing funding possibilities. Nevertheless, it has also led to a progressive "expropriation" of the public realm, turning what was once a common good into an exploitable resource.

Urban quality and the maximisation of profit hardly ever coincide. To seek quality, "both cities and government must make their influence felt" (13). Integrated urban development means to include private stakeholders in the planning process from a very early stage: positive results should be of mutual benefit, and neither public nor private must give up the negotiation.

For this to happen, a shared understanding of urban quality should be achieved. What private housing investors often advertise and market in relation to their developments are aspects related more to a popular idea of housing quality, rather than real quality criteria. Quality must be transparent, based on sound and measurable criteria, and be clearly explained to end-users.

To this end, some cases of "quality certification" for housing developments have been successful in setting standards for private developers. This has been particularly vehicled by the increasing awareness of environmental issues, and by the need to reduce energy consumption and costs.

Another fundamental aspect is bound to communication: housing quality should be discussed by the general media, helping end-users form an understanding of what they can actually gain from well-designed residential neighbourhoods. Although the difference between speculative developments and high-quality architecture is well known in specialised circles, the wider public is certainly more influenced by marketing strategies carried out by private subjects.

What the public sector can do is to set certifiable quality standards for new housing developments. Although these cannot be binding, given the partially subjective nature

of the planning and design process, it is nevertheless possible to set them as necessary conditions, in the framework of integrated urban development, for the private investors who partake in the process. It is to be clearly stated that, in face of a contained increase in the initial investment, there can be a major improvement in the marketability of developments bearing an official “quality seal”.

Social and public housing developments, despite their minor quantity in respect to private housing, can play a strong role within this process. Given the greater control which the public can exercise over these undertakings, they should serve as pilot models for all other developments within the same area, clearly showcasing the fact that urban and architectural quality is not necessarily connected to cost factors.

Housing, and in particular affordable and social housing, demands the quest for a high level of quality perceived by end-users, and obtained through accessible technologies and low costs. It is thus necessary to invest in research on technologies with a low environmental and economic impact, to create buildings which are affordable to build and manage.

1.5 Coping with energy costs: sustainable neighbourhoods and fuel poverty

The growing energy crisis has long-since sparked the birth of “sustainable neighbourhoods” throughout Europe. This has been particularly true in Northern European countries, such as Germany, Denmark, Austria, etc., where climate conditions are such as to prompt strategies for the reduction of heating costs. Initiatives of this kind are generally born with clear aims related to overall urban quality. Sustainability is not simply conceived as a means to reduce the carbon footprint and energy bills, but rather as a more comprehensive way of structuring urban life. From transport to landscape, from building construction to public spaces, everything tends to be defined in order to vehicle the citizens’ lifestyle towards a more sustainable model.

The power of these undertakings lies in their long-sighted will to steer the model of urbanity in a wholly new direction. Traditional conceptions of the city are challenged altogether, providing answers integrating the urban with the economic, the ecologic with the social. Because of its very nature, sustainable urban planning and architecture requires a high degree of integration, which turns it into a privileged tools to foster integrated urban development.

Investing in the culture of sustainable neighbourhoods and buildings not only leads to benefits in terms of the city’s environmental balance: it is one of the key elements to intervene on the social sustainability of urban development. The reduction of environmental “costs” in building development of our cities can also help reduce the growing impoverishment of some social groups. This phenomenon, highlighted by the difficulty in coping with the costs of energy services, especially those related to winter heating, is defined as “fuel poverty”.

The conditions of economic precariousness to which some social groups are exposed (young couples, elderly people, single-parent households or large single-income families, etc.) create difficulty in coping with the costs required to achieve minimal levels of thermal comfort in winter. Throughout the EU fuel poverty is still lacking a homoge-



"Solar cities" (low-energy, environmentally friendly mixed developments) are gaining ground throughout Europe. Above, a building in the Linz-Pichling Solar City, Austria

neous definition, since the phenomenon is still in the process of being studied.

Recently, within the EU IEE – Intelligent Energy Europe program, the "EPEE Project – European Fuel Poverty and Energy Efficiency" has concluded the first systematic inquiry on energetic poverty, identifying the main causes and the indicators which can highlight borderline conditions for this phenomenon.

The combination of factors such as the increase in energy costs, and the low energy-performance of buildings causes an exponential increase in the costs sustained by end-users in order to obtain minimal comfort and health conditions within their dwellings. Intervening on the energetic efficiency of the building-installation system is the first means for the reduction of overall energy consumption, and therefore to diminish the economic impact of energy services for end-users. Especially in the case of social housing, the costs sustained by users can heavily burden the family budget.

1.6 Building technology: innovations and strategies for housing construction

Among the challenges of European urban development in the immediate future there is certainly that of identifying technical solutions to realise buildings economically, with low environmental impact, and good levels of comfort and quality as perceived by end-users.

The specific difficulty in the housing sector consists in the interaction with current building practices. The incidence of these techniques' cost on the overall cost must not be excessive, such as not to condition pricing when the new building is put on the market. The longer-term aim should be that of being able to design and build technologically innovative buildings which are less expensive than traditional ones, also improving the overall impact on the environment.

The sustainability of a project and the quality of the construction from the energy point of view depend largely on, among various factors, how the building is built. In particular, it is necessary to pay special attention to the definition of the superficial and border elements through the external and internal ambience (the envelope) that deter-

mine the requirements of the building and respond to the needs of the users who will live there.

On this theme, the most evident aspect is the emergence of environmental and economic advantages that have an impact not only on the external environment, but place the user's quality of life first. The adoption of new rules and new performance requirements will lead to a reduction in energy consumption for heating and air conditioning, therefore a notable reduction of electricity bills (installation of air conditioners, hot-water plant for cleaning, electrical plant) in the course of the useful life of the building. On the other hand, the environmental advantages are a direct consequence of improving the efficiency of buildings and their plant systems: lower fuel consumption in fact means less emission of gas into the atmosphere and a lesser impact of materials used in the environment.

The theme of eco-efficiency should be attacked head on not just through the technological qualities that the technical solutions will be able to guarantee. The importance of building management - highlighted in the objectives of the European Council, taken up by national and local regulations - underline another element of reflection: the constantly growing role and importance of installations in the management of building stock. In this discussion, we find the growing incidence of alternative installations needed to sustain buildings, as much from the point of view of initial costs as the dimensional impact of the same on the area under consideration.

The increase in requests to use renewable sources along with the demand to reduce energy consumption and CO₂ emissions into the atmosphere translates therefore into the need to think about the integration of plant both as a means to reduce the country's energy demands and as a source of co-generation able to guarantee positive economic returns in the conduction of the buildings. In this context, the existing ties between installation systems and the building envelope assume particular importance: every choice made in one of the systems weighs significantly on the planning and dimensions of the other.

The choice of the planner will undoubtedly be that of finding the most suitable solution within a combination of conditions, opportunities, and links that are reference points for the environmental characteristics of the site in the course of the seasons during the year, with a control of the external part of buildings in relation to their orientation and to the activities carried out internally, as well as - in virtue of the errors of the past - attributing to the morphological quality of buildings the specific character that distinguishes the history of each and every place.

1.7 Improving technical knowledge as dissemination of a new culture of building governance

The diffusion of guidelines or codes of practice allows public bodies to exercise the functions of directing public building activity towards strategic sectors such as social housing, also having a significant impact on private building.

In a field where the public sector is unable to intervene without private capital, or where it is important to steer private undertakings towards controlled and coherent standards of environmental quality, in the absence of detailed technical programmes

for interventions, the public sector is turning more and more to papers on directing and supporting planning which, to be made efficient, are linked to current instruments for urban planning or to traditional local building regulations, in such a way as to establish their efficiency in the territory.

Many local administrations are equipping themselves with codes of practice for constructing or adapting social housing, aimed at the qualification of building activity in a sector which has enormous weight in terms of construction in the area and its impact on energy consumption and the wellbeing of the inhabitants. High environmental quality, and encouraging the wellbeing of the inhabitants have a central role in these support tools for drawing up and planning interventions; furthermore, these instruments have the role of incorporating all the indications and requirements of local and national building regulations which cover the various aspects of construction, above all implementing those aspects regarding energy conservation or the optimisation of those elements relating to widespread environmental quality. In this way, alongside the traditional indicators can be placed a system of best practices, suggestions for the environmental quality of projects regarding the energy and environmental functioning of sites and buildings, and on the knowledgeable use of technological solutions aimed at an overall performances improvement in the uses of the building and its urban context.

These instruments for directing and controlling planning activity, in the specific case of public residential building allow the insertion into a sector of low, or very low, technological complexity, almost always run on a minimal budget, processes and product innovations that otherwise the operators would tend to refuse, considering them incompatible with their established practices and their company profits.

The risk of impermeability to technological innovation in the residential sector is often due to the separation that exists between those who construct the buildings and those who manage them. In fact, those whose only role is to carry out interventions have no interest in investing in the efficacy of an object from which they will receive no economic benefit. Those who only build and limit themselves to marketing new dwellings have no interest in investing in solutions that might be more expensive but that render that building much more efficient; this distorted behaviour can be found just as much in energy management as in the management of land suitable for building.

The first truly innovative interventions from the point of view of the application of innovative and efficacious provisions in terms of resources, space and energy management, are coming to light thanks to the investments of cooperative groups and the agencies for public residential building.

In these contexts where the economic promoter, builder, manager and end-user are involved together from the outset of the process, the living efficacy and energy efficiency of the interventions are absolutely central to the development of the projects.

These subjects often turn to internal codes of practice, or "agreed codes", defined between end users and builders that contain minimum undertakings to guarantee the satisfaction of specifics of use identified by the managers and end users as qualified into the entire life cycle of the building. Obviously, the more decisions are shared and agreed, the greater will be the overall efficacy of the intervention, both for those carrying it out and for those who will have to live with it. These types of best practice are the same ones that allow opposition to the growing phenomenon of energy poverty, which in the social housing sector is unfortunately ever more widespread, exposing the

weakest members of society and the institutions who assist them to an ever-greater economic precariousness triggered by the merely modest efficiency of the building system (structure/plant) where they live.

It is therefore important to place alongside every new means of directing, planning or legislating building activity, instruments for evaluating and directing planning in such a way as to render immediately available for planners and builders an additional supply of competences and instruments to confront in a knowledgeable manner the planning of dwellings that are suitable for those who will then live in them .

This type of instrument can in fact have an impact on the technical culture that is found in the sector: providing "unusual" competences and innovative technical solutions will also have an impact on the technical formation of single operators. Correct use and the implementation of codes of practice for the activity of planning and construction can lead to the demolition of the traditional distrust among workers in the sector, enriching their range of professional experiences and instruments.

Accompanying these indications with accurate economic evaluations of the various building procedures in terms of parametric costs related to the total cost of the works, placing them in relation to the performances of single procedures, will also allow the builder or the planner to choose the solution they prefer without compromising the overall performance of the building to be constructed, since they are always able to control with established and traditional instruments the overall cost of the interventions.

The code of practice or the guidelines, if used in such a way as to become also a means of capitalising on competences and technical know-how, will tend to become a real instrument of the technical brief at the disposition of the clients and end users.

In the case of habitual clients, such as Agencies for Residential Housing or the local bodies in charge of managing great housing estates, or again in the case of housing cooperatives, who bring together the thousands of small and medium cooperatives of users/inhabitants or constructors, the development and implementation of a codified technical brief allows the modelling of a number of planning and constructive behaviours, thus allowing the optimisation of the single intervention in function of the specific environmental and dimensional characteristics to be confronted each time and in each case. This, other than guaranteeing an average raising of the quality of the different constructions and the quality of life of the users, permits the optimisation of the technical costs for single projects and the reduction of extra costs due to any eventual planning or construction errors, normalising a number of processes of elaboration and above all of control of projects and their outcomes.

The construction and development in time of a codified technical brief allows the consolidation of the competences of the client who has imposed and promoted them, leading to a profound redevelopment of the entire life cycle of the building system. The technical knowledge of clients, planners and constructors can therefore grow in a physiological manner around the settling in of the practices that are analysed and evaluated in the codified technical brief. It is evident that the patrimony of technical competences should be updated continually or periodically, drawing in any eventual feedback from the projects that have been carried out by various subjects, otherwise the risk would be that of ending up proposing an infinite series of "catalogue solutions" proposed over and over in a sterile manner throughout Italy. If well managed, these instruments can be extremely useful for a redevelopment, that will also be economically sus-

tainable, of the small commissioning organisations present in our country.

As things stand, the dissemination of this type of experience in a very compartmentalised sector both at the level of demand as well as supply, is undoubtedly strategic to reach all the subjects involved in the sector of residential building, much more so than legal provisions that are often perceived as oppressive and incomprehensible by those they affect. It is not possible to intervene on the environmental quality of the residential market if we don't think first of having an impact on the technical culture of the operators in the sector, modifying some of the systems of operational relations that are not compatible with the new needs of the sector and the users.

These instruments always have to assume the role of a planning guide, in such a way as to be able to consolidate the idea of a city in which sustainable building is not just an occasional added value on infrequent occasions, but is a current practice in all constructions, even the most modest, as many of the experiences described can represent the departure point for the consolidation of this culture and this widespread practice.

1.8 Guidance tools for housing quality

The complex situation outlined above requires the use of specific tools to promote the integrated development of residential neighbourhoods. Traditional planning instruments are often too generic in scope and range to be able to promote architectural quality. In many cases, planning instruments are still bound to zoning principles, defining the strict spatial distribution of functions. It is a bi-dimensional approach to spatial organisation, privileging the quantitative over the qualitative aspects. In this framework, there is a clear need to identify tools and strategies to further specify and define qualitative standards at all levels of design. Sound design principles are of great importance in defining, among others:

- Master plans;
- Public and private transportation strategies;
- The allocation of functions and activities in relation with residential areas;
- The relationship between public and private spaces;
- Integration of green and built areas;
- The massing and dislocation of buildings;
- The typological layout of residential buildings;
- Building construction;
- Integration of renewable energies.

Previous successful experiences have showcased a wide array of instruments for the promotion of architectural quality in housing developments, which integrate some or all of the above factors. Many municipalities have set out guidelines for new housing developments, also identifying possible strategies to promote the implementation. These range from making pressure on private investors to comply with municipal-level quality standards, to informing end-users of the potential gain to be derived from high-quality dwellings.

Among these various tools for the promotion of urban and architectural quality in housing developments, design coding appears to be one of the most successful ways of fostering integrated urban development at all levels.

2. Design Codes: Project Guidance for Housing

As we have seen, the problems which planners and designer must face today can reach a very high level of complexity: coping with the regulations and high demands set out by public and private can become a distressing factor. To ensure the achievement of high levels of quality, measured against criteria which are shared and transparent, clear guidance is needed. Design codes can provide this kind of guidance, without constraining the final results.

Design codes can be conceived as basic manuals for urban planning and architectural design, intended to set standards in relation to the layout of master plans, the relationship between public and private spaces, the composition of buildings, construction technologies, and strategies for the reduction of energy consumption. The guidelines are meant to be an aid for both designers and contractors. Design coding proves of particular effectiveness in the case of housing development, given the limited complexity of the design and construction process.

2.1 What is a design code?

A design code is an illustrated manual of design components (at the scale of the building, the city or the landscape, depending on the application), which also provides the rules and the advice on how to use and integrate them, in order to guide the development of an area. Thanks to this set of written and graphic rules, design codes make it possible to guide with precision the spatial form of a specific development. Indeed, they establish the three-dimensional elements of a developing area and their mutual relations, so that they can orient the final quality of space without forcing the overall outcome.

Generally, the roles of code designers and development designers are distinct: the former set the context for the whole complex, within which the latter produce a building or a sub-area design.

Design codes have by now acquired a certain tradition of use throughout Europe; in particular, they have been widely adopted in the United Kingdom, where the use of master planning is structured in such a way as to favour the application of this kind of instrument. Given the interesting potential lying in design codes, the Department for Communities and Local Government, together with the Commission for Architecture and the Built Environment – CABE – have produced an assessment of the use of design coding, as well as guidance documents on the preparation of design codes.

2.2 Design codes: a site-based tool for design principles

The specificity and potential of design codes lies in their double nature. On one hand, they focus on producing design principles (rather than settled shapes), which ensure the delivery of a better quality for the urban environment (for example, they may require to observe some indications for streets and blocks or some architectural prescriptions for the buildings' performance).

On the other hand, they are much more than generic guidelines, which can be usually found at local or national level, since they refer to a specific site or place. Design codes are able to take in consideration and improve the particular asset and character of a place (not only the physical asset of an area, but also the particularities of local stakeholders and policy context). In other words, they are site-based and, to be effective, need a physical vision for the area they apply to. That is why design codes are fruitful when integrated with master-plans, regulating plans and other frameworks establishing the general vision to be "shaped" and articulated in the development and design process.

The nature of design codes supports the cultural change in the planning system, which needs to move from an abstract and two-dimensional approach to a three-dimensional and spatial one.

The site-based and design-principles establishing approach gives to design codes the chance to be a useful tool for all the parties involved in the urban development process (public authorities, planners, private developers and citizens), because they fix the "must have" design elements, that is the design characteristics of fundamental importance for that site. When the management of design codes is able to foresee the interaction among private and public interests, a great and shared clarity and certainty is provided over what is acceptable design quality.

What aspects of planning and design do design codes address? This can be quite variable and depends on the process of coding itself. Design codes are often prepared as a complementary instrument for master plans: in this case, they are specifically related to a single intervention, and can provide precise indications related to building height, massing, distances between buildings, etc. In other instances, design codes come "before" master plans, thus also providing guidelines on how master plans are to be elaborated.

Once the outreach of a design code has been set out, it can provide indications related to all further aspects of design. It can address:

- public space structure, in terms of the relationship between public and private realms;
- the composition of buildings;
- the treatment given to urban furnishing and green areas;
- style elements (14);
- the articulation of private or common interior spaces in buildings;
- building construction, especially in terms of sustainable design.

The relationship between design coding and environmental issues is particularly important as a design guidance. The adoption of adequate construction techniques is necessary to achieve acceptable levels of environmental performance. Furthermore, a

number of design decisions taken from the outset of the design process can greatly enhance the buildings' qualities in relation to passive solar heating and cooling; these optimal choices can be constituent part of the design codes, thus helping designers in making the correct decisions from the outset.

2.3 Using design codes: strengths and weaknesses

The potential of codes lies in their ability to manage the complexity of integrated urban development. Indeed, the use of design codes, as defined above, should aim at delivering processes built on consensus rather than conflict. With respect to this, two aspects seem to be the most relevant in the decision to adopt codes.

A) Design codes: tools to improve urban quality. The first fact, concerning the outcomes for using them, is that they can play a major role in delivering better quality developments. In particular, with respect to residential development, there is often a lack of quality. On the contrary, developments built in compliance with design codes can create high-quality places in terms of urban / architectural design and construction / materials. The improvement in design quality also provides enhanced economic value, since a high-grade development is able to deliver a stronger sense of place and a worth to invest in it. Design codes are tools to manage the complexity and can co-ordinate inputs from different designers / developers and integrate various design components according to certain rules.

B) Design codes: tools to deliver more certain development processes. To achieve the objective of increasing the quality level in urban development, however, a significant investment in terms of human and financial resources is requested. In fact, to produce a good code, time investment and a skilled team are essential, as well as the involvement from the very beginning of all interested stakeholders (public and private) and the users. Contrariwise, regarding the development process itself, the investment in time and resources from the outset ensures the delivery of a more certain and clear development process. Sustainable development means not only an improvement in buildings' performance or in design quality, but also an improvement in the process itself, which should be transparent and clear.

It is clear that no process of governance can ever manage to fully bring together all demands of both public and private subjects: the goals of one and the other are and remain different, and the negotiation implicit in the development of a design code must try to find a reasonable compromise for all stakeholders. Just like any other tools to promote good governance and urban quality, a design code must be shared and supported by all actors in order to achieve good results.

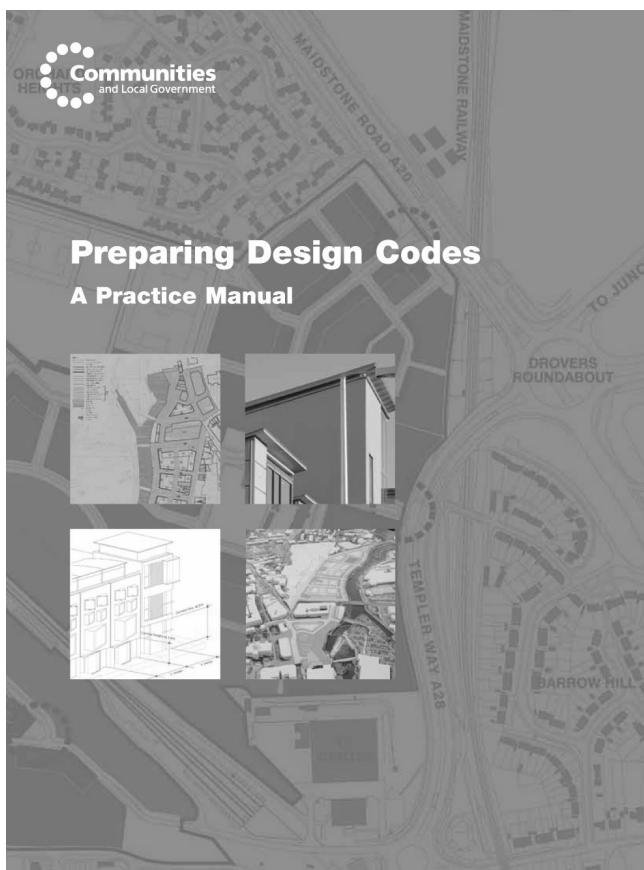
Indeed, design codes may also need to be supported by further governance tools in order to be successful. If a design code sets out clear and measureable quality standards, the authority implementing it could also introduce "awards" for private developers who achieve them. These awards could be of economic nature (e.g. a proportional increase in concessions for high-quality developments), a labelling system for urban, architectural and environmental quality (e.g. a city or regional label for good quality housing, which, if supported by appropriate communication strategies, could enhance a development's marketing potential), or other forms of incentives for end-users who

Design Coding in Practice

An Evaluation

“Design Coding in Practice” and
“Preparing Design Codes” are
two documents produced in
2006 by the UK Department of
Communities and Local
Government to promote the
adoption and implementation of
design codes in urban develop-
ment.

For more information:
<http://www.communities.gov.uk>



buy or rent quality-certified dwellings.

Both developers and end-users must thus be stimulated in participating, each at its own level, in the process leading to quality. No matter what the incentives are, design codes must not act as unnecessary constrictions: on the contrary, they must stimulate a positive and pro-active approach. For this to happen, public authorities need to be in the front-line of the process, supporting the design codes from the beginning of the negotiation all the way through the post-evaluation and reviewing: they have to act as “tutors” of private enterprise, defending the common interest represented by public space.

2.4 Making design codes

The process of design coding can be complex, and its flow is dependent on the specific context where it takes place. A first relevant fact is bound to the players, in particular, whether the process is started by a private or public subject.

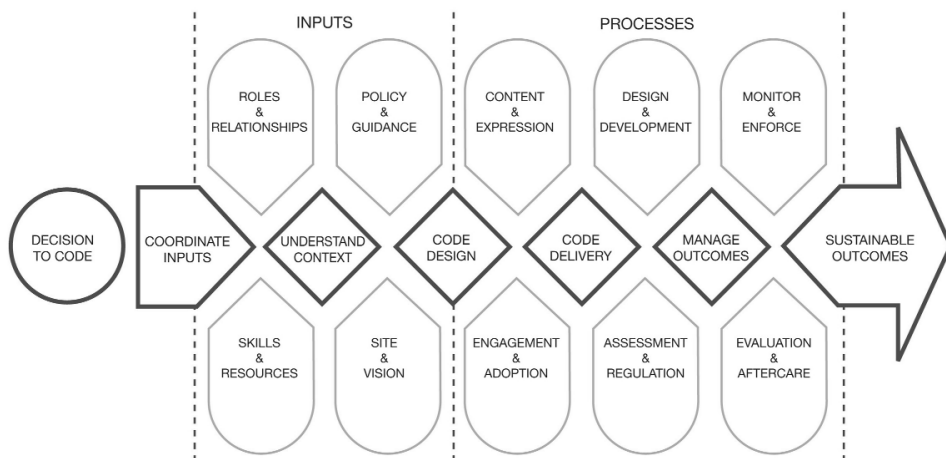
- Among the actors and stakeholders in the coding process are to be found:
- Public: Planning authorities, transport authorities, environmental agencies, building control authorities;
- Private: Landowners, funding agencies, master-developers, parcel developers;
- Designers: Master-planners, designers, code designers.

Each of these actors partake in one or more of the phases of the coding process, from the initial decision to develop a design code, to the negotiation process between stakeholders, to the implementation and the final assessment / review of the design code. A role of great importance is to be covered by the code designers, since they are the subjects who should follow the life of the design code throughout its entire cycle. Code designers can be either research centres or private consultants, depending on the complexity and outreach of the code.

In general, design codes tend in general to be site-specific, i.e. prepared to implement the particular urban and architectural vision for a certain development. This means that they are established after the drafting of the master plan, thus embodying in their guidelines the ideas of the master planner. Nevertheless, particularly in the case of public housing initiatives which span over several distinct development areas, design codes can also be of a more generic nature, providing also indications concerning the setting up of master plans.

Depending on their final target, design codes can also adopt a variety of different expressions. Although they are generally addressed to professionals who are able to understand and interpret technicalities connected to urban and architectural design, at times design codes are also intended for end-users who wish to “empower” their existing dwelling through the adoption of some retro-fitting action, particularly in the case of the implementation of renewable energy sources.

In general, the process of design coding requires a “front-loading” in terms of time and resources. This initial burden is to be counterbalanced, through the implementation process, by a reduction in time necessary for the auditing and approval of submitted designs, as well as by the expected greater quality of overall delivered results.



A typical design coding process. (Source: Department for Communities and Local Government, Design Coding in Practice: An Evaluation, 2006)

2.5 Design coding in practice: European case studies

Although “Design coding” is not a strictly codified way of guiding planning and architectural design, throughout Europe it has been implemented in many different contexts, often achieving remarkable results. What follows is a brief overview of recent design coding experience at European level: it does not mean to be exhaustive, but rather to show the wide variety and range of applications which this kind of instrument can be adopted for.

This brief list of case studies is subdivided into three parts: new settlement design codes, redevelopment design codes (which include cases of retrofitting, renovation and new construction alike), and design guidelines, which are not strictly site-specific but still fall into the idea of design coding.

The case studies which are here briefly presented clearly show that design coding, along with other forms of advanced project guidance, can actually serve as “invisible” tools in the definition of architectural and urban quality. This means that, if well drafted and correctly implemented, regulations can actually serve to promote quality and homogeneity while leaving open the road to architectural innovation. It is also important to observe that, among the examples which have been chosen, some are celebrated architectural realisations which have been widely published and acclaimed. It could be said that design coding acts on the process, helping guarantee its soundness, without negatively influencing the outcomes.

In this situation, the importance of using case studies lies exactly in this specific character: that, although good architecture is often and generously published in magazines and websites with glossy photographs, little is generally said about the governance processes lying at the base of some good developments. The capitalisation process within the project will thus focus on highlighting the good processes which have led to good results.

A. New development design codes

Greenwich Millennium Village, Greenwich (United Kingdom)

In 1997, English Partnerships took on the commitment of transforming Greenwich Peninsula – previously the site of the largest gas works in Europe – into a residential community. Greenwich Peninsula is one of the largest development sites in London and one of Europe's biggest regeneration projects.

The importance of a natural environment has also been recognised throughout the development at Greenwich Peninsula. Three main areas of parkland have been created including an ecology park, and extensive works have been carried out to improve the riverside environment.

The first residents arrived in December 2000. Over 950 homes have been built and occupied, including a number of live/work units, with a further 150 currently under construction.

The masterplan was drafted by Ralph Erskine and Proctor and Matthews architects, together with a design code meant to link together individual buildings through density, use of colour and materials, exterior spaces, etc.

(Source: <http://www.cabe.org.uk>)



1997-2010

Borneo Sporenburg, Amsterdam (The Netherlands)

As part of the phased regeneration of disused areas, a residential brief of 2500 dwellings was set for the two peninsulas of Borneo and Sporenburg, dictating a high density of housing.

The plan divides the low-rise buildings into three zones with architecturally distinctive high-rise residential buildings creating significant landmarks within the harbour landscape. The variety of dwelling types includes both three storey terraces with patios and gardens, some of which are poised on canals, and apartment blocks.

Borneo Sporenburg reverses the predominant social trend towards a dense urban core inhabited by childless couples, singles and the extremes of high and low income, and a suburban fringe occupied by middle-class families. The development demonstrates that family housing is not incompatible with dense urban areas.

The masterplan was drafted by West 8, whereas individual buildings were designed by a large number of architects who worked using a design code dictating block densities and heights, use of materials etc.

(Source: <http://www.cabe.org.uk>)



1996-2000



Upton, Northampton (United Kingdom)

In 2001, a plan for a sustainable community was prepared using a design code. This included a network of connected streets with a spinal high street, and shifting local services to the urban extension's edge to link with adjoining neighbourhoods and better integrating it with the rest of Northampton.

The Upton Framework Plan received planning approval in February 2003 for eight sites. The design code was not adopted by the local authority but became the landowner's instrument for achieving the plan's objectives and the basis for selecting house builders. This was done through a two-stage tendering process, the first producing a short list based on design quality, from which the second stage winner was selected by taking financial considerations into account.

Although the Upton development is based on traditional architectural forms, it represents an example of how a design code can help achieve homogeneity and controlled levels of architectural quality.

(Source: <http://www.cabe.org.uk>)



2001-2007

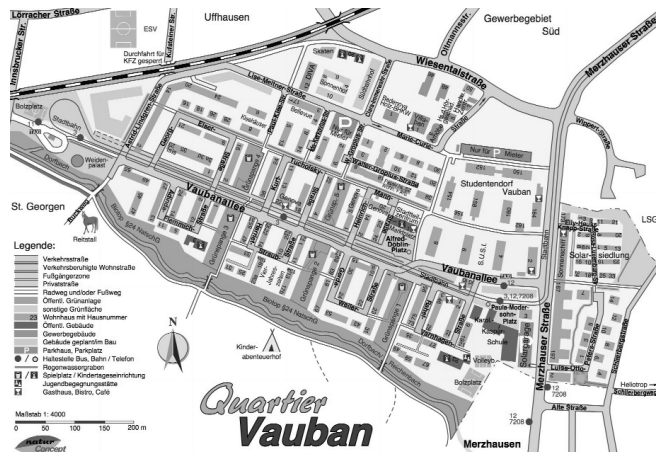
B. Redevelopment design codes

Vauban Neighbourhood, Freiburg (Germany)

The Vauban neighbourhood in Freiburg is the renovation of a former French army ground, which was used until approx. 1990. Since 1992, cooperatives collaborating with the City administration sparked numerous regeneration actions, all focused on sustainable design and the implementation of solar energy. Since then, Vauban has become a “model” ecological neighbourhood, where initiatives on transportation, recycling, social inclusion, environmental protection, etc. are carried out experimentally. Low-energy building is obligatory in this district; zero-energy and energy-plus building are becoming standards.

Design coding was used to address building performance standards, open-space concepts, waste-water management, and conservation of the historical military buildings.

1993-2006



Town Centre River Corridor, Rotherham (United Kingdom)

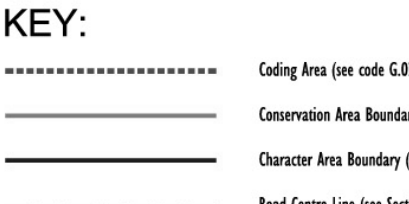
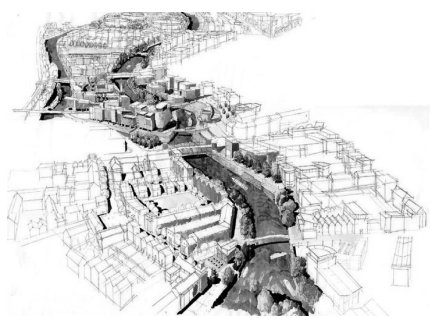
The Rotherham Town Centre Design Code was drafted to enable the requalification of a central city area along the river with a degraded public realm. The intention thus consisted in enhancing the urban structure through housing redevelopment within the city centre.

The Design Code is based on a Regulating Plan, showing the arrangement of streets and properties for development according to the master plan. The General Codes set out the key controlling elements of the plan, such as the frontage, the building line, and areas within public highways and footways. The General Codes also identify the distinct character areas which provide the overall framework for the Urban Codes.

The Urban Codes are based principally on the street, setting out the three-dimensional aspects of each street as well as the nature of the public realms. The Detailed Street Codes also include indications for land use and parking.



2005



Good, Green, Safe, Affordable Housing

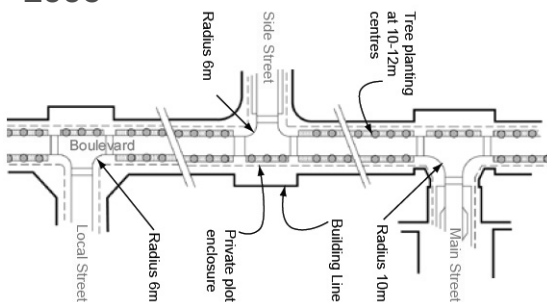
Walker Riverside, Newcastle (United Kingdom)

The Walker Riverside Design Code's intention is to promote innovation in design and to develop the component parts of the neighbourhood to work together successfully. Given the previous conditions of lack of variety in design, wide and bare streets, and the conflict between the local desire for secure parking and a wider need to encourage greenery and pleasant street scene, the Code's vision was to promote diversity in existing as well as high-quality, new housing.

To achieve these goals, the Code intends to bring together players from all stages of the development process, to speed up the planning and application process. Unlike most other cases, the Walker Riverside Design Code is a prescriptive document, conceived as a Supplementary Planning Document (SPD) within the framework of Newcastle's Unitary Development Plan.



2006



C. Design guidelines

Environmental Performance for Housing Guide, SAN Sénart (France)

This manual is not strictly a design code, but rather a guide which focuses on the environmental performance of housing, for both new buildings and retrofitting. It is a practical instrument aimed at developers and homeowners, including technical as well as commercial information regarding the potentials of environmental investments.

The guide bridges a numbers of distinct competences, from urban and architectural design to building construction, installation technology and marketing strategies, all aimed at promoting the implementation of energy-saving and production strategies, water protection, natural ventilation and lighting, geothermal energy, solar and PV energy, etc.

The initiative to produce the manual was taken by the Syndicat d'Agglomération Nouvelle (San) Sénart, an authority established in 1973 by eight Municipalities in the Southern Ile-de-France Region, for a total of about 110.000 inhabitants spread on 12.000 ha.



2008



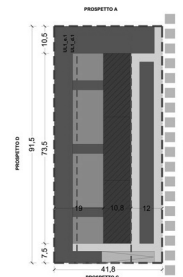
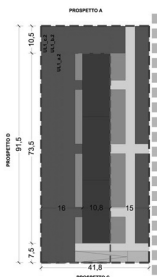
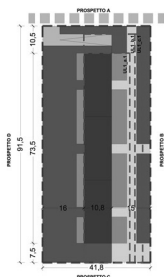
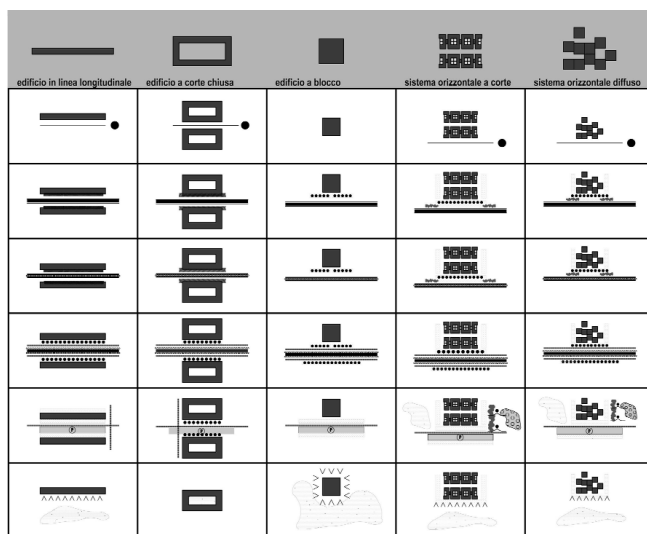
Code of practice for new public housing, Rome (Italy)

The central aim of the Code of practice for new public housing in Rome was that of providing private contractors with an accessible and updated design manual, identifying critical issues related to both the urban whole and individual buildings. The results were organised in an organic instrument, intended to guide designers through the complex decision-making process leading to the construction of the new residential areas. Public administrations monitoring the process would furthermore be able to adopt the Code of practice as a tool to verify submitted designs.

The adopted methodology set out from a critical revision of current standards and policies related to public housing on both the national and regional level. Given their general backwardness, guidelines for their adaptation to today's deeply transformed social, demographic and economic conditions were devised.

The Code of practice was delivered in June 2007, and approved by the City Council in September of the same year. Currently it is in the implementation phase, and the construction of 22 of the new residential developments is about to begin.

2007



Guidelines for the Olympic and Multimedia Villages, Turin (Italy)

For the 2006 Winter Olympics, the City of Turin had to confront a phase of great investment in planning and control both of civic buildings as well as of large facilities and infrastructure. This preliminary commitment produced a series of instruments that were useful in planning and controlling the construction of these works, which formulated regulations for the elaboration of the projects of the Olympic works, and the "Guidelines for sustainability in the planning, in the building and in the management of the Olympic and Multimedia Villages".

The guidelines, drafted by Environment Park in collaboration with experts from the Polytechnic of Turin, are put forward as an operative instrument, aiming both at subjects involved in the running of the Olympic Programme and planners of the works foreseen for the Olympic Villages. Apart from the requirements of environmental quality, appropriate technologies, normative references, indicators and the instruments to verify the satisfaction of each phase of the project, construction and use were also indicated. This document derives from the political-strategic will of the promoting committee to place the promotion of sustainable development as one of the fundamental objectives of the Olympic movement.



2004

Notes

¹ Transformation of organizational and managerial experiences into structures, processes and work methodologies is the main activity of the best practices individuation. This allowed the selection of many examples in policy making processes

² The term defines the process through which a performance is measured in respect of standard indicators

³ Some 3rd generation plans: Metropolitan City of Barcelona and Metropolitan Region of Madrid, Lyon 2010, Metropolitan City of Bologna, Provincial Coordination Plan of Milan 2003; 4th generation plans: Territorial Plan of the Rome Province 2003, Territorial Plan of the Veneto Region 2005, POLY.DEV Project 2007

⁴ Article 2 of Treaty establishing the European Community

⁵ Article 6 of Treaty establishing the European Community

⁶ Green Paper on the Urban Environment - Communication from the Commission to the Council and Parliament COM(90) 218 (1990)

⁷ The "Climate action and renewable energy package": the European Commission's legislative proposal to achieve agreed EU objectives in the fight against climate change, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - 20 20 by 2020 - Europe's climate change opportunity COM(2008)0030 final

⁸ See: New leaflet on the Sustainable Development Strategy; Presidency conclusions of the European Council on the renewed European Sustainable Development Strategy (15-16.06.2006); European Council: A renewed European Sustainable Development Strategy (DOC 10917/06)

⁹ Communication from the Commission to the Council and the European Parliament on a Thematic Strategy on the Urban Environment COM(2005) 718 final

¹⁰ Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings on Thematic Strategy on the Urban Environment COM(2005) 718 final {SEC(2006) 16}

¹¹ See EU programs such as SAVE, THERMIE, VFP, ALTENER, JOULE, ManEnergy, LIFE, CONCERTO and LIFE+

¹² Commission Communication of 15 December 2005 "Report on demonstrable progress under the Kyoto Protocol" [COM(2005) 615]. This Report states that, although the Kyoto Protocol only recently entered into force, the European Union has made significant progress in fulfilling its commitments. In particular, this progress is due to the implementation of the European Climate Change Programme, as well as measures specific to certain sectors (transport, industry, energy, etc.) and additional domestic measures. The Kyoto target of reducing emissions by 8% can be met if Member States implement additional domestic measures and use flexible mechanisms. This Report, which is based on information communicated to the Commission in June 2005, is required by Article 5(3) of Decision 280/2004/EC

¹³ Leipzig Charter on Sustainable European Cities, signed on 24.05.2007

¹⁴ In the United Kingdom, design codes are often seen as promoting traditional architectural language. This is however a misconception, since many design codes are in fact style-neutral, and leave the choice of expression to designers.

3. Partner Profiles

Hopus is a URBACT II working group encompassing a wide variety of research experiences (urban planning, housing policies, building construction, energy certification, environmental design, etc.) and two city administrations pursuing higher levels of quality in new housing developments. The partner profiles try to draw a shared understanding of current trends on urban governance and sustainable development in each local situation, in order to outline possible action frameworks for further work on design coding.

The URBACT II Working Group Hopus is made up of five research centres (located in Rome, Delft, Guimarães, Gdansk, Reggio Calabria) and two city administrations (Sheffield, Reggio Calabria). This composition required the setting up of specific questionnaires for each kind of partner, in order to collect homogenous and comparable information. The objective of the questionnaire thus consisted in collecting examples of current national and regional policies in Europe that directly or indirectly address the issue of urban development interdependencies, i.e., in this specific case, all factors which influence the development of housing projects. Such policies may include, e.g., those aiming at:

- regulating the development pressures from urbanisation of housing areas;
- strengthening the economic structure of declining remote areas;
- regional development, transport, industry, rural, spatial planning, environment and urban development, but also having indirect impact on urban relationships (polycentrism, sprawl, etc.).

Relevant national (NUTs 1), regional (NUTs 2), sub-regional / provincial (NUTs 3) and metropolitan / municipal (NUTs 4-7) policies which explicitly focus on the interdependencies between urban and housing development (such as policies aiming at strengthening social and functional links between cities and level of integration of sustainability strategies) are provided. Other policies which, although not directly designed to address the urban environment - buildings relationship, may affect them indirectly, are also listed.

The partner profiles are divided in three sections: the first addresses the question of governance, the second that of urban structure, and the last one deals with environmental sustainability. In many cases, information regarding either city, regional, or national level is provided.

A. CITERA

Inter-department Centre for Territory, Building, Conservation and Environment

"Sapienza" University of Rome – Italy

A.1. Partner description

CITERA is a research centre set up in 2001 within the Faculty of Architecture "Valle Giulia", "Sapienza" University of Rome. Its members belong to the Departments of Urban Planning, Architectural Design, Construction Technology, Technical Installations, Sociology etc. It is therefore a multi-disciplinary research centre, and from its foundation it has carried out a significant number of activities for both public and private subjects. It is a part of "Sapienza" University, a public institution which is the world's second-largest University. CITERA's most significant involvement in the field of housing studies has been the drafting, carried out during 2007, of the Code of practice for new public housing developments in Rome.

A.2. Urban governance: policies and procedures

Regional level policies

Region Lazio introduced the **General Regional Territorial Plan (PTRG)** with the aim of coordinating and overseeing planning activities of the 5 provinces and the municipalities within the regional territory. The PTRG defines the general and specific objectives of regional policies, of relevant sector programmes, and all regional-interest actions.

The PTRG provides directives (precise indications) and general guidelines which must be received by local planning authorities; furthermore, the regional authority must be consulted for all plans at territorial level.

Among the main goals of the PTRG are:

- Enhancement of the settlement market for key economic regional activities such as tourism, directional functions, research, culture, etc.;
- Support to industrial activities, through the rationalisation of industrial structures;
- Valorisation of environmental resources;
- Control of land use by limiting urban sprawl, protecting the water cycle and preventing environmental pollution;
- Enhancement of the system of connections between the Region, its surrounding territory and the wider spatial system, through the improvement of transport nodes and networks;
- Orienting and supporting deconcentration by distributing special functions;
- Supporting the diffusion of activities in existing urban structures, thereby promot-

- ing requalification of degraded areas;
- Improving the existing housing stock and its use;
- Rationalisation of the administrative system.

Province-level policies

The **General Provincial Territorial Plan (PTPG)**, which is in the process of being approved, draws out strategic scenarios for the Province of Rome up to 2015. Given the overwhelming importance of Rome's urban area within the Province, the plan aims at setting out the "Metropolitan Province". This means enhancing the metropolitan function of the provincial territory, intended as an integrated system formed by urban areas with different weights, which need to be balanced with Rome, keeping in mind specific identities and values. To this end, adopts EU indications on spatial planning in relation to social and economic cohesion, protection of natural and cultural resources, and promotion of a balanced territorial competitiveness.

The PTPG's main goals are:

- Establishing more efficient relations, both material and immaterial, for work and leisure between the central and peripheric areas, privileging public transport;
- Valorisation of settlement and productive models characterising local subsystems, while considering the provincial territory as a whole;
- Balancing "bottom-up" development with overall planning of strategic functions, marketable services and mobility systems;
- Higher environmental and urban quality, by raising standards on sustainability;
- A generalised use of inter-institutional cooperation, in particular with collaboration between different municipalities.

In this perspective, the coordination of the new PTPG with Rome's General Urban Plan is of paramount importance, given the polycentric nature of the proposed developments. This would mean achieving a double polycentrism, balancing the city and regional level.

City-level policies

Rome's new **General Urban Plan** was adopted in February 2008, 46 years after the previous plan. In the meantime, a number of intermediate plans had gradually updated urban planning strategies, without however providing a coherent vision for the overall growth of the city.

The Plan receives the recent trends in the city's growth, which is characterised by slow demographic expansion of the city, and a strong increase in the building stock with subsequent changes in the real estate market. This has led planners to particularly focus on urban transformation and renewal. The general concept of the Plan is guided by the following principles:

- Reduction in overall building coefficients, to achieve higher urban and ecologic quality in the transformation process;
- Areas for green spaces and public services over minimum standards are granted free of costs;

- Increase in non-residential uses to favour functional mix;
- Compensation, i.e. the concentration of services pertinent to neighbouring areas to obtain a higher number of green spaces;
- Control of water permeability indexes, density of tree planting, and maximum building heights.

To achieve these goals, new instruments are adopted, such as integrated programmes, which presume public-private partnerships and preliminary feasibility evaluations for undertakings. Urban projects, which become compulsory for relevant interventions, introduce preliminary assessment of social, environmental, morphologic, economic, and administrative conditions.

The new Plan is strongly process-oriented, and identifies a number of different sub-systems within the urban area of Rome, among which:

- Historic centre;
- Consolidated city;
- Renovation areas;
- Transformation areas;
- New urban and metropolitan polarities;
- General public services.

In this regard, a number of key urban projects were started in 2003, which served as testing ground for the new plan's development.

The spatial strategy proposed by the new Plan aims at rebalancing the system through the introduction of 18 new centres, which should serve as focal points for residential developments and various functions, decongesting the consolidated urban centre in terms of both mobility and activities. This new polycentric development foresees the introduction of innovative functions, strongly connected with the surrounding existing city, hinged on the main intermodal transport nodes of Rome. The new centres should thus serve to redefine Rome's peripheric areas, endowing them with recognisable character and identity. The new Plan therefore means to reconfigure Rome's urban strategy in terms of morphology, functions, social and economic aspects, as well as under a management point of view.

Beside the large-scale interventions connected to the 18 new centralities, the Plan intends to involve Rome's 19 Municipal administrations in the urban transformation process, assigning them responsibilities concerning the wider diffusion of small-scale interventions on the existing city.

Given the incidence of Rome's urban system on the provincial and regional territorial structures, it is clear that relevant actions need to be undertaken in coordination with other administrations. To this end, a specific Office for the Urban planning of Rome's metropolitan area was created, inspired by principles of co-planning and subsidiarity.

A.3. Urban development: policies and procedures

New housing developments: Code of practice for new public housing in Rome

In 2007, Risorse per Roma, a public company acting on behalf of the City administration of Rome, entrusted CITERA with the drafting of a Code of practice for the development of new public residential neighbourhoods in Rome. This was done in order to establish clear quality criteria and guidelines for the private developers who would partake in the design and building process.

The central aim of the design code was that of providing private contractors with an accessible and updated design manual, identifying critical issues related to both the urban whole and individual buildings. The results were organised in an organic instrument, intended to guide designers through the complex decision-making process leading to the construction of the new residential areas. Public administrations monitoring the process will furthermore be able to adopt the Code of practice as a tool against which submitted designs could be assessed. The adopted methodology set out from a critical revision of current standards and policies related to public housing on both the national and regional level: given their general backwardness, guidelines for their adaptation to today's deeply transformed social, demographic and economic conditions were devised.

The question of urban layout was addressed by highlighting best practices bound to the relationship between built volumes and public spaces, green areas, parking areas, traffic networks, relevant urban functions etc. In particular, special care was dedicated to the systematisation of urban spaces on the basis of their attitude to host large-scale public functions, commercial uses, leisure, etc.

Finally, a number of basic architectural types for housing was reviewed and systematised, offering a series of coherent indications related to size, height, density, distribution, dislocation of common spaces, unit organisation and the definition of living areas. The Code of practice thus mainly focuses on four issues:

1) Urban space. A systematic analysis of possible urban situations in peripheral areas was carried out, providing schematic answers to recurring conditions in terms of building layout, relationship between buildings and open spaces such as streets, squares and parks, the definition of green areas, etc. The aim was that of guaranteeing the quality of urban spaces, suggesting ranges of solutions to achieve optimal integration between new neighbourhoods and the existing urban fabric, as well as between public and private functions.

2) Residential buildings. Five major systems were identified, providing designers with a significant and flexible range of solutions encompassing both typological variability and the consistency between buildings and their accessory areas (parking, private and semi-private gardens, common spaces, etc.). This was done in order to suggest the adoption of verified typological solutions, correctly balanced between building height, density, and the articulation of different apartment sizes, in response to the need of achieving a generalised situation of social mix.

3) Living units. Setting out from applicable regulations related to living unit size and the organisation of functional spaces, as well as from updated user needs and demands, numerous solutions aimed at guaranteeing full flexibility within the living

spaces have been provided. These respond to actual family structures (singles, single-parent households, elderly, communities, immigrants, etc.), introducing functional layout variations on daily or seasonal basis. Furthermore, long-term flexibility, including the expandability of living units, is made possible through the controlled enclosing of common spaces and loggias, as well as through the variation of unit layout on the same building level.

4) Sustainable building. The Code of practice provides a strong focus on energy conservation at all levels of design. Starting from the urban scale, indications are provided concerning building orientation and the possibilities offered by natural ventilation and shading through vegetation. At the building level, the manual provides a visual guide to screening measures which need to be taken according to the different shading situations. These are picked up at the detailed scale, where the visual guide refers to specific application of screening devices. Finally, sustainable construction components and elements are reviewed in terms of their performances, allowing designers and developers to choose among a wide range of solutions which help them comply with current and upcoming regulations on the reduction of energy consumption.

Throughout the drafting of the manual, care was taken to constantly connect the idea of "quality" with tangible facts positively impacting on the life of future inhabitants. The Code of practice was thus devised in order to serve as a practical aid for private operators in the building sectors, who will be called to provide designs responding to elevated benchmarks of quality related to urban space, residential buildings as well as interior spaces. The organic collection of information, best practices and design indications provided by the manual, which will become a binding document for all involved in the realisation of the new residential districts, may help streamline the process leading to the achievement of this high level of quality.

The Code of practice was delivered in June 2007, and approved by the City Council in September of the same year. Currently it is in the implementation phase, and the construction of 22 of the new residential developments is about to begin. Nevertheless, administrative changes following the political elections held in Italy and Rome in April 2008 might bring about changes in the timing of the operation.

A.4. Urban structure and existing housing stock

Rome's urban structure is characterised by a dense and compact city core, partly consisting of historic areas which make up the central part of the city. The main urban expansion has taken place in the post-war period, with large mostly residential neighbourhoods being built over the decades spanning from 1948 to 1970 approx. During this period, a number of major public housing programmes determined the development of urban space (INA Casa, PEEP, etc.), while the majority of growth was given by very small cooperative apartment blocks ("palazzine") generally lacking any urban vision and necessary infrastructural systems. Many neighbourhoods were built without complying with planning instruments, resulting in very dense residential areas lacking any form of public space, green areas or even basic services.

Public transport is based on two subway lines, a number of suburban rail lines, and a capillary network of buses. This system is insufficient to cope with the public trans-

port demand, and a large amount of private cars give place to intense traffic conditions, compromising public bus transport as well. Since the city attracts large numbers of daily commuters from the province, peak traffic hours often see widespread traffic blocks. Further subway developments are under way, but traffic is one of the city's critical problems. In general, new important infrastructures are built for major events only (1960 Olympic Games, 1990 Football World Cup, 2000 Jubilaem, etc.).

The historic centre represents the city's main touristic attraction, and hosts a large number of special administrative functions as well, such as government seats, ministries, universities etc. Some administrative functions have migrated to the Southern part of Rome, or are in the process of being relocated. The centre has never lost its residential function, although demographic changes are constantly lowering the density of inner-city inhabitants.

Given the soaring real-estate market, Rome is undergoing a major residential expansion process, mainly taking place around the highway belt surrounding it ("Grande Raccordo Anulare"), and along the main rail and road axes. Most developments consist in private, speculative neighbourhoods, with low urban and architectural quality which is nevertheless marketed as being high-end. The population's shift to the peripheries, which is sparked by high rents in the inner city, is aggravating traffic conditions. Over the past two decades, the City administration has exercised only a very timid control over new developments, while concentrating attention on inner-city requalification.

Further residential growth is determined by wide urban-sprawl areas, characterised by single-family houses with small gardens, stretching far into the territory of neighbouring cities. These low-density areas have ravaged the natural landscape, further burdening transport systems.

Existing housing stock is very diversified, and reflects the long urban history of Rome.

A number of different dwelling types can be identified:

- Before 1880: historic buildings rising on the traditional urban fabric, high density;
- 1880-1920: post-Unity expansions, with large apartment blocks inspired by French models; occasionally, garden-city suburbs;
- 1920-1945: mainly cooperative apartment blocks in newly developed areas; for public housing, low-density garden-city inspired neighbourhoods;
- 1948-1970: small cooperative apartment blocks with high density and low urban quality; for public housing, large estates mainly based on line building or towers;
- 1975-onwards: mainly private development apartment blocks, plus large areas developed with detached housing. Public housing programs decrease sharply.

The average condition of housing stock is fairly good (around 80% of total stock), since fiscal incentives for building renovation have been given for several years. Despite the availability of incentives, very few of these renovations have implemented energy-reduction retrofitting such as additional insulation, or energy-production installations. Main building technologies of existing housing stock are reinforced concrete structure with brick pane walls and terraced or tilted roofs (39,8%), load-bearing walls (41,7%), by other types of structure (18,5%).

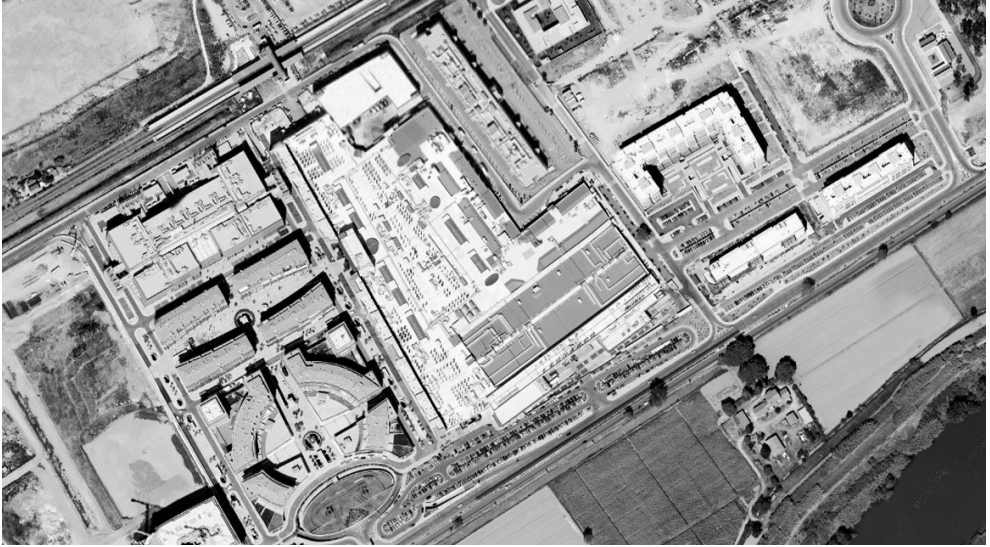


Figure 1: Parco Leonardo development on the Rome-Fiumicino highway. High-density private settlement integrated with large commercial and leisure activities



Figure 2: Tor Bella Monaca. A 1970's residential neighbourhood with both public and private housing developments, which is now being "completed" with new residential and service buildings

A.5. Sustainability and energy efficiency: policies and procedures

National policies and regulations

Laws 192/2005 and 311/2006 have received EU directive 2002/91 into the Italian legislative system. Its main objectives are:

- Improve energetic performance standards of buildings;
- Optimising the energetic management of the building-installation system;
- Promote the reduction of energy costs and of CO₂ emissions;
- Develop a national system of building energy certification.

These laws have a nationwide application scope, and the body responsible for the steering and overseeing of the Laws' implementation is ENEA – Agency for New Technologies, Energy and Environment. Specific guidelines on energy certification, building energy efficiency, etc. are in the process of being published, whereas regarding building process and materials, the recent UNI 11277:2008 norm on Building sustainability – Eco-compatibility requirements and needs of new and renovated residential and office buildings, sets new guidelines on the production of materials and components, functional requirements, etc.

Incentives for sustainable building are being gradually introduced at regional level, where the implementation of the ITACA protocol is producing modifications on existing regulatory framework. Region Lazio has recently adopted a regulation in Regional Law 6/2008 on Sustainable Architecture and Building. This law provides incentives and funding for sustainable building. Other national incentives can be obtained for energy efficiency, in particular for the installation of photovoltaic and solar thermal panels. Some energy providers have introduced lower rates for economically disadvantaged citizens.

Regarding energy certification, the **ITACA protocol** is the fruit of the action undertaken by the national work group made up of representatives of all regions and also attended by **APAT** – Agency for the Protection of the Environment and Technical Services, set up in January 2002 by ITACA (National Association for Innovation and Transparency in Tendering and for Environmental Compatibility). The outcome of the workgroup's activity is a shared protocol that permits the attribution of eco-sustainability points to buildings, but, above all, with the adoption of the protocol, a shared method of evaluating sustainability in building interventions was established.

The protocol is expressed in a series of guidelines collected in seventy evaluation forms that correspond to the same number of requests for environmental compatibility. The forms are completed by informative elements, namely the legal and technical references and the weight of the requirement. The matrix of reference is the GBTool. The criteria for evaluation of the level of eco-compatibility of the construction under consideration in the system were structured and codified in areas of evaluation, which, in turn, foresee a series of performance sub-requirements. The system of awarding points is also derived from GBTool, with the possibility, for each administration, of adjusting the weight of each individual requirement to adapt it to local realities.

Already a number of administrations are referring to this document, including Tuscany Region which has placed alongside this methodology adapted for the drafting of

"Guidelines for sustainable building in Tuscany" a "Basic list of materials for sustainable building", a document that represents a support instrument for planners and administrations for the knowledgeable choice of technical solutions for the construction of buildings.

Local policies and regulations in the City of Rome and in Region Lazio

Regional law 2004/15 on the implementation of solar thermal energy and the reduction of water waste in buildings was the first regional policy through which the Region Lazio aimed at improving life conditions and protecting the environment. This law required local administrations to integrate the building regulations in order to provide, in both new buildings and renovations, the installation, among others, of:

- Solar panels for hot water production;
- Rainwater recovery systems;
- Installation of faucets with air-water mixers;
- Draining flooring for external spaces.

This law first introduced incentives to favour interventions and to promote low-energy buildings. Additional volumes built to comply with this law are excluded from the computation in building applications.

Rome City Council Resolution 2006/48 on the implementation of solar thermal energy and the reduction of water waste in buildings received the above regional law. This resolution integrated Rome's building regulations with a packet of indications aimed directly at the promotion of the creation of interventions for environmental improvement and for the use of alternative energies with particular regard to solar energy, the optimal use of materials, components and systems to attain adequate levels of thermal isolation and thermal inertia in the building envelope, as well as ensuring the profound permeability of the ground soil in urban areas. The path chosen by the City of Rome wasn't that of voluntary adherence to these indications but the forced imposition of specific regulations, turning therefore to indications of a quantitative character rather than relating to performance.

The innovations introduced by this resolution are in line with the Technical Specification of the Rome's New General Urban Plan, approved in 2008, which introduces an award system for buildings meeting high standards of sustainability. Incentives can be under the form of tax reduction, or an increase up to 5% of admitted built surface.

In Rome, the EU co-financed project **Roma per Kyoto** (LIFE Program LIFE04ENV/IT/000453) was introduced in 2004 and will run until 2008, for a total budget of 2.300.000. Project partners are:

- City of Rome;
- Rome Province;
- ENEA – National Energy and Environment Agency;
- Roma Energia (City agency for energy saving and sustainable development);
- Roma Natura (Regional agency for the protection of natural areas in Rome);
- Atac (City agency for public transportation);
- Tallaght Institute of Technology – Dublin.

The project's aim is to define an action plan for the City of Rome to comply with the guidelines set by the Kyoto protocol, to be adopted by the City Council. The first two years of the project's implementation have reportedly brought to a 20% reduction in CO₂ emissions by all involved partners, who account for a significant share of public greenhouse gas production. This project will define actions to be implemented in order to reach the goal of 6,5% reduction of CO₂ emissions for Italy by 2012 as compared to 1990 levels.

The project is complex and multi-faceted, and has a dual character. The main component is the analysis, definition and experimentation of a city-wide plan with the objective of achieving multi-phase project of general validity that can be reproduced and spread elsewhere. The evaluation of the probable risks and of the results achieved will be realised through the use of an appropriate documented procedure. The procedure will specify requirements to identify statistical indicators and to make actions in order to prevent non-conformities, record the effect of the actions and to intervene rapidly if anomalies and/or non-conformities occur. However, equal importance is given to methodology, which can provide the foundations for similar programmes in the other large urban centres of Europe. To this purpose, actions envisaged are:

- Quantifying the reduction by assessing the 1990 emissions and projecting emissions to 2012;
- Identifying the reduction strategies for:
- A reference-point scenario that evaluates the reductions achieved as a result of structural interventions carried out or planned within the city limits;
- Absorption of greenhouse effect gases through an increase in the sinks used for forestation and reforestation and sustainable soil management;
- Reduction of emissions by way of the use of electric energy produced from renewable sources in the City's territories (through production or purchase from producers and distributors with green certification);
- Optimising final uses, both by utilising technologies that are already consolidated but not yet widely used and by utilising energy efficiency measures ("green" purchasing specifications, energy service contracts, boiler efficiency in household heating, the use of high efficiency lighting systems, etc.);
- Sewage disposal site improvements;
- Incentives towards sustainable mobility (evaluation of planned intervention in public transportation in order to modernise fleets and better manage the City's fleet of vehicles, etc.).

The plan will provide an exact estimate of the emission absorption and savings, thereby underscoring the achievement of the objective;

Carrying out some of the planned measures within the City and, in the case of others, within a single Municipality (the City of Rome includes 19 Municipalities), in order to verify their effectiveness and quantify the actual savings achieved (pilot actions). The kinds of action foreseen are:

- Reduction of emissions via actions on the part of municipal authorities (absorption of emissions via forestation activities in certain public and private green spaces within the area of the Municipality; developing terms for "green" purchasing on the part of the City; adopting "energy item"s in the Municipal budget

in accordance with sustainable development; energy diagnosis of public offices and of the schools within municipal areas, with pilot action regarding energy service contacts; installing public lighting in certain municipal streets using photovoltaic lamp-posts, i.e. replacing filament light bulbs with high-efficiency ones; pilot implementation within the Municipality of the General Urban Traffic Plan via an Urban Traffic Plan; servicing of the centralised "heating and regulating" boilers of buildings owned by the Municipality and used for housing);

- Reduction of emission through the use of suitable technologies and practices by citizens (encouraging consumers to purchase solar energy or energy from other renewable sources; informing consumers of the energy savings achieved by using high-efficiency light bulbs in households; a public awareness campaign regarding the servicing of household heating boilers).

The most important actions yet realised are:

- The increase of the energy efficiency in production and consumption by using renewable energies;
- The adoption of measures to limit the traffic by trading in at least half of old circulating vehicles for more ecological ones and realising a faster public transportation web within the metropolitan area;
- The increase the transportation of goods by railway and sea;
- The increase in the methane consumption in the industrial, transportation and civil uses sectors.

B. OTB

Research Institute for Housing, Urban and Mobility Studies

Delft University of Technology, The Netherlands

B.1. Partner description

OTB is the Research Institute for Housing, Urban and Mobility Studies of the Delft University of Technology. Its core activities are scientific and contract research, as well as the formulation of policy advice. It is organised in seven Departments. Involved in the Hopus project is the Department of Sustainable Housing Management and Quality Assurance / Housing Quality and Process Innovation. Its mission consists in performing strategic research in the areas of:

- Sustainable and healthy housing;
- Strategic housing stock policy and technical management;
- Building regulations and quality assurance.

OTB, together with the Faculty of Architecture at TU Delft, is implementing HQ2020 - Housing Quality 2020: Knowledge development for a sustainable energy transition of housing stock. It is a research programme for external funding of OTB and Faculty of Architecture in cooperation with housing associations and other organisations.

OTB is part of Delft Technical University, one of the world's leading research and educational institutions in the fields of planning and architecture.

B.2. Urban governance: policies and procedures

The **New Dutch Spatial Planning Act** (Nieuwe Wet Ruimtelijke Ordening) came into force on July 1st, 2008, promoted by the Ministry for Housing, Spatial Planning and the Environment. Its main goals are:

- Prevent harmful effects on the countryside and on the environment;
- Prevent urban sprawl;
- Reduce the mobility demand.

The National Spatial Planning Strategy is a basis for a development-oriented spatial policy. In this strategy, the national spatial policy is fixed until 2020, and the period from 2020 to 2030 serves as outlook on the longer term. The strategy sets the spatial contribution to a strong economy, a safe and liveable society and an attractive country. Decentralisation, deregulation and direct implementation, offering greater latitude for other levels of government, members of the public and market parties are the fundamental principles of the National Spatial Planning Strategy and the associated Implementation agenda. Working together from the start on an integral vision for a

particular area makes it easier to deliver quality and achieve an equitable distribution of costs and benefits. Processes of urban governance thus come into play, integrating economic, social, spatial and cultural aspects in a process which should be “not top-down, nor bottom up, but middle-up-down steering”.

The national government wants to concentrate urbanisation and infrastructure in national urban networks, economic core areas and major transport axes as much as possible. The Netherlands is developing into a network society and a network economy. There is more and more coherence between the various cities and urban areas. Partnerships between such networks expand the support base of public facilities and services and open up opportunities for optimal use of the scarce space. To respond to this trend, the national government has designated six national urban networks.

On the basis of the new Spatial Planning Act, municipalities, provinces and the national government are required to set out their policy in a number of tools:

- One or more structural visions, which can be characterised as a strategic policy document. The vision is intended to contain the basic principles of the spatial policy, and should indicate how officials expect to implement this policy. Structural visions can be seen as “self-binding” visions, but they do not possess legal status;
- The zoning scheme will be repositioned in the new Spatial Planning Act as the central instrument in municipal spatial planning. It will now become compulsory for all municipal lands, and be updated every ten years;
- Provinces and the national government have the power to institute an integration plan, which can be compared to the zoning scheme for municipalities. Primary authority of the zoning scheme lies at the municipal level: the provinces and national government can only use their authority for an integration plan if provincial or national interests are at stake;
- If no spatial developments are planned in an area, municipalities can choose to institute a management regulation.

Dutch spatial planning has traditionally been concerned with the main structure of urban and rural areas. The Fourth Note on Spatial Planning (Vierde Nota Ruimtelijke Ordening) focuses on spatial quality. The Ministry of Housing, Spatial Planning and the Environment indicated urban structures and the location of cities around green open areas. Many new housing developments were put on the programme. The VINEX (Supplement to the Fourth National Policy Document on Spatial Planning – Vierde Nota Ruimtelijke Ordening Extra) adds two new policy themes, directed at two distinct scales: the Netherlands in an international context, and the everyday living environment.

The tendency for the government was to make way for private initiatives. In the Netherlands, thousands of new dwellings have been constructed in the past years on so-called VINEX locations, places of urbanisation indicated by the national government. The VINEX task was very large: an integral approach of bundling housing and work functions, especially public transport facilities was necessary to let spatial policy contribute to environmental enhancement, with regards to tackling mobility problems. VINEX implied this “bundling” policy (bundelingsbeleid), meaning that housing, non-agrarian employment and facilities need to be bundled in “stadsgewesten” and in regional centres. VINEX meant to:

- Prevent further harmful effects on the environment and on ecological and landscape values of the countryside through restrictive measures;
- Avoid unnecessary mobility, guaranteeing an optimal approach to urban areas with public transport and bicycle;
- Reinforce the urban capacity.

Criticism on VINEX neighbourhoods has been harsh: they are considered to be too uniform and monotonous. At the time of completion, amenities like transport, green spaces and schools turned out to be incomplete. Among the countermeasures adopted by VROM was to make agreements with different parties and to increase the influence of residents on the design of dwellings and living environment. Furthermore, the idea that concentration reduces travel distances and promotes a shift of transportation to non-motorised vehicles and public transport is open to debate.

Over the past years, a shift from “bundled deconcentration” towards “concentration” can be noticed and the Netherlands is well known for its compact city policy. The first note on spatial planning (1960) introduced a policy to spread urbanization to keep the Dutch Green Heart (Groene Hart) open. The second note on spatial planning (1966) focused on bundled deconcentration, assigning centres of urban growth, but the national government also indicated green buffer zones between the large cities. Bundled deconcentration was continued in the third note, which was developed between 1973-1983 and eleven centres for urban growth were indicated. The fourth note on spatial planning of 1988 was focused towards 2015. The concept of preserving a green open area was continued, but also many new dwellings were planned. The fourth note on spatial planning ‘extra’, the VINEX (1994), was focused on the concentration of new dwellings in the first instance in existing cities, followed by the city-borders, and in the last resort at a distance from existing cities. The concentration of development in inner-city areas is still one of the cornerstones of Dutch spatial planning (Tambach, Korthals Altes; 2007).

Development planning is a method that makes the implementation of spatial plans, visions and projects the central consideration. Its objective is to allow initiatives by the public, companies, community organisations and authorities to be carried out more often and in a better way. Development planning is necessary to improve entire areas and ensure that complex projects are carried out. Its main features are:

- Adopting an area-dedicated approach that improves spatial quality in the entire area;
- Co-operating and agreeing firm arrangements with stakeholders;
- Carrying out various projects cohesively, by such means as an implementation programme or “project envelopes”.

The **Action Plan for Powerful Districts** (2007) marks the shift from urban renewal (stedelijke vernieuwing) towards district regeneration (wijkenaanpak). This policy aims to upgrade 40 districts that suffer from unemployment and higher than average crime rates. Housing associations play a significant role in the district approach. Apart from socio-economic and physical improvements, energy saving is an important issue. The **Land Development Act**, a supplement to the Spatial Planning Act, is a simplified, practice-based regulation for the allocation of the costs of land development.

Moreover, the act will ensure that the municipalities can make demands with respect to preparing a location for building, public utilities, the design and planning of open spaces and specific housing categories.

The Housing Act offers some space for realising ambitious policy goals on sustainable building and on energy conservation of the housing stock that exceed current building regulation, in using innovative building products or methods. Municipalities can try to set specific environmental requirements for the use of building materials.

B.3. Urban development: policies and procedures

Housing stock development procedures are articulated between various departments of municipalities. The common division between the municipal departments is that the Urban Development Department drafts urban plans and structure visions and the Housing Department drafts housing visions and district action plans (Wijkactienplannen). In the case of The Hague, a Department for Building Physics and Building Ecology negotiates performance agreements with housing associations, and in addition, the municipality implements the ROMbo method, to integrate sustainable building in the planning process. Finally, a Department of Public Health / Municipal Health Service (GGD) guards, protects and promotes the health of citizens in collaboration with housing associations and other municipal departments.

The Municipality develops zoning schemes (Bestemmingsplannen), which are legally binding plans for all actors. These plans can contain housing categories such as social housing. It draws up housing visions together with local stakeholders, such as housing associations, and grants building permits. Nevertheless, a growing number of housing market issues are no longer local, but approached in a regional perspective.

Master plans are designed by local authorities (mainly municipalities) together with private partners. They function as public-private “communication tools” at area level. In general, they follow from structure visions and are later developed into zoning schemes. Quality control over masterplans is carried out by municipalities and, in some cases, masterplans are accompanied by “sustainability paragraphs”. Quality control over individual buildings is in the hand of local authorities through the Building Permit Procedure. Nevertheless, since the building control system in the Netherlands is changing, control is increasingly passing in the hands of private partners.

Private subjects play a significant role in the housing development process through the establishment of public-private partnerships (joint ventures, production agreements, building claim model, etc.). Developers play an important role since the VINEX locations were indicated and they started to purchase land on these sites. As a group, they claim more and more strategic land position: municipalities owe the steering instruments to tackle these stakeholders, and can make performance agreements with developers. Project developers are more focused on financial benefits than municipalities, and they preferably invest in housing projects with a low risk. In their view, housing projects need to be client-oriented and have sales potential. Their involvement, which used to be at a more territorial level, is more and more seeking collaboration with municipalities, on which they are dependent to obtain development rights.

B.4. Urban structure and existing housing stock

The **urban structure of the Randstad** is a polycentric metropole with compact cities. City centres are being subjected to redevelopment and district renewal, in order to prevent urban sprawl, posing the challenge of housing on previously developed (e.g. industrial) land. Main productive areas are concentrated in specific cores, called Greenports (e.g. Westland), Mainports (Schiphol, Rotterdam port), Brainports (Delft University of Technology, University of Leiden) etc.

New urban developments tend to draw from traditional Dutch urban design experience, with a strong focus on sustainability from the outset of the design process. The main housing typology is based on blocks of apartments, whereas single-family houses are generally semi-detached or row housing. Two major operations for renovation have taken place in the past: the Dutch national “insulation programme” and local “heating replacement” programmes, both aiming at reducing energy costs.

The average age of the housing stock in the Netherlands is approx. 42 years and, given the limited new housing production, by 2014 1/3 of the existing housing stock will be older than 50 years, with the remaining 2/3 being older than 20 years, calling for increased actions in the field of urban renovation.

B.5. Sustainability and energy efficiency: policies and procedures

The Netherlands’ **Fourth National Environmental Policy Plan** (NMP4, 2001) sets sustainability as a long-term goal. Sustainable building policy has been formulated in the 2002 policy letter, Climate Policy Implementing Note. It focuses on three aspects: energy, building materials and health. Sustainable building is not obligatory, as the current Building Decree (2003) does not contain regulations regarding it. The Decree does however contain safety, health, utility and energy efficiency regulations. In the so-called National package for sustainable building, instruments have been developed for sustainable building and urban design, which are used by many municipalities. Sustainable building is stimulated by governments on both national and local levels. Since 2008, the national package for sustainable building has become part of a newly developed “Theme package sustainable building” (SBR, Themapakket Dubo) in the form of a “Catalogue for Sustainable Building” (Dubo-Catalogus).

Since 1995, the **Dutch Building Decree** contains requirements with regard to energy performance of a building to stimulate the building sector to take energy efficiency measures. The energy efficiency of a building is expressed in the EPC, a Dutch “energy performance coefficient”. This enables an integral assessment of the energy efficiency of a dwelling and of its installations under the regime of EPBD. Different energy performance coefficients are indicated for different sorts of buildings. For new residential buildings, the EPC calculation is based on NEN 5128 and is obligatory, when handing in a request for a building permit. Since January 2006, the EPC for dwellings needs to be lower than 0,8. A voluntary Energy Performance Advice (EPA) can be given, which is not part of the decree and provides tailor-made advice on energy reduction measures. Minimum performance requirements (standards) for environmental aspects are



Figure 3: Wateringse Veld. New residential development on a VINEX location in Den Haag.



Figure 4: Duindorp, Den Haag. Best practice redevelopment.

also missing in the current decree.

One of seven public-private platforms, called the **Platform Energy Transition Built Environment** (PeGO), is a public-private strategy for energy savings in the built environment. It consists of three study groups: innovation, energy reduction in existing buildings and regulation. The innovation study group created the 'Energy Transition Plan PeGO' (PeGO, 2007a), a plan that aims to reduce the consumption of fossil fuels by 80% in all buildings in 2050, compared to the 1990 level. It aims to set going a self-learning and continuously innovating chain, in which local and national

transition coalitions will work together on the implementation of new and improved techniques in the built environment, from a central bundling of knowledge. Essential to this aim are knowledge transfer, motivation and the support of actors in the building chain and the realisation of 80 large-scale demonstration projects with rising ambition levels of 45%, 60% and 80% CO₂-reduction in three consecutive cycles between 2008 and 2012. By realising them, regulation is intended to be sharpened in order to realise a CO₂ reduction of 80%, viable in 2030 in newly-built dwellings and in 2040 in renovated dwellings.

Innovators will take part in transition groups to realise pilot projects, which are believed to help 'scale up' the process on a local level. A "coordinator for scaling up" will stimulate local authorities to draw up Local Energy Transition Plans. Knowledge transfer, education and financial tools must be provided and further worked out to stimulate energy transition on a national scale. First, transition management is considered to help scale up transition-experiments and make them a commercial success. Second, commissioning is applied to guarantee the energy performance of buildings and installations throughout the building process, as formulated beforehand in building programmes.

The **existing Dutch housing stock** contends with bad energy performance (SenterNovem, 2008), although it does offer the potential to reduce CO₂ emissions. New residential buildings make up only 1% of the annual production. Efficient legal instruments at the disposal of municipal governments to enforce energy certification of the existing housing stock are currently absent. Moreover, performance norms for environmental aspects and energy performance standards for existing residential buildings and functions are missing in the current Building Decree. The More with less plan, the national plan for energy saving in the built environment, has the goal of a yearly energy reduction of 100 PJ by 2020 through a national approach that aims at a 30% average reduction of energy consumption in 200.000 to 300.000 existing dwellings, and commercial and industrial buildings every year (PeGO et al., 2007). The plan's main strategies are to build up a 'structural market for energy savings', to increase the knowledge level regarding energy, indoor climate and building quality among market parties, and to approach private homeowners, renters, housing associations, tenants, as well as owners/users of commercial and industrial buildings to encourage them to take energy efficiency measures.

The **Energy saving in new buildings covenant** for new housing developments between the central government and market parties, pursues a 25% reduction in energy consumption in 2011 and a 50% reduction in energy consumption in 2015 in new residential and in commercial and industrial buildings, which will be energy neutral dwellings by 2020 (SenterNovem, 2008). This reduction is compared to the attached energy use in buildings, built under the building regulation of January 1st 2007, which falls under the scope of the energy performance norm EPN.

The government aims at sharpening the EPC in 2011 to 0,6 and in 2015 to 0,4. The covenant aims at the development of a new energy performance norm which better fits in with the actual energy use and consumer needs, such as comfort and living expenses and consumer behaviour. The new norm should be restricted to measures on parcel level. Area-oriented measures will be accounted in a separate calculation method. Based on the climate agreement between the central government and munic-

ipalities, ten experimental areas will be selected, in which parties can experiment with very energy efficient building and innovative energy reducing techniques. In recent years, a number of Energy Performance Instruments have developed been and introduced into practice:

- Energy Certificate 'EnergieLabel': In the Netherlands, the energy certificate (required by the EPDB), which indicates a building's energy performance and which provides standard advice regarding energy-efficiency measures, is obligatory since January 1st 2008 at the time a building is built, sold or rented. Since May 1st 2008, advisors who issue the energy performance certificate have been required to pass a national exam.
- On-site Energy Performance (Energie Prestatie op Locatie: EPL): A governmental communication instrument to realise reduction in the consumption of fossil fuels and to support local parties in the decision-making process to choose the best energy infrastructure. The range of the scale is from 0 to 10 (no consumption of fossil fuels). In the case of an installation of a gas- or electricity networks on a location with newly-built dwellings with an energy performance of EPN 1,0 and a central heating, the level of the EPL is 6,0.
- Energy Performance Norm (EPN): Governmental instrument to check the energy efficiency of a building. Installation advisor and building physicist are involved in building design at an early stage.
- EPCheck: Civil servants use manuals and computer programmes, such as EPCheck, as enforcement instruments for the energy performance of newly-built dwellings when granting building permits. Enforcement tasks are often contracted out to private enforcement agencies. Civil servants and producers may ask for 'equality declarations' to enable the introduction of innovative technologies in the field of energy.

In The Netherlands, the current **Toolkit Sustainable Housing** contains new and improved concepts. It is a tool to translate high governmental ambitions regarding CO₂-reduction, health, indoor climate of dwellings. User groups of the toolkit for communication purposes with residents are developers, housing associations, architects and municipalities. To every sustainability aspect, a quality profile has been defined, which is subdivided in ambition levels for CO₂-reduction, urban ecology, health, comfort and consumer-directed approach. Three methods form the basis to decide on environmentally friendly materials.

Twenty energy concepts have been worked out, optimised by computer simulations and provided by financial and performance references. Moreover, four "material concepts" and four "health concepts" have been worked out with the required process. Theme pages on heat and cold storage, 'outsourcing' of sustainable energy-installations and resident guidance were developed. On the basis of the Dutch principle for energy saving, Trias Energetica, concepts have been developed that reduce the energy demand to a minimum and concepts with a maximum use of sustainable energy technologies, like the Passivehouse concept.

C. Department of Civil Engineering

University of Minho – Portugal

C.1. Partner description

The Department of Civil Engineering at the University of Minho has a wide experience in the field of energy certification and labelling, and has participated in numerous European research projects on the topic, among which: SHE - Sustainable Housing in Europe; URBVENT - Natural Ventilation in Urban Areas; Coordination of COST Action C25 - Sustainability of Constructions; Coordination of WP3 - Walls and Roofs - of COST Action C16 - Improving the quality of existing urban building envelopes; Coordination of WP3 - Urban Design - of COST Action C12 - Improving buildings' structural quality by new technologies; Collaboration in COST Action TU0701 - Improving the Quality of Suburban Building Stock.

The University of Minho, representing a major function within the city of Guimarães, has played a key role within the definition of the urban fabric. The CampUrbis project – University Campus in the Urban Mesh – consisted in the rehabilitation of the abandoned leather manufacture zone, creating new urban spaces combining the new University of Minho Campus, cultural spaces, residential buildings and new infrastructures.

C.2. Urban governance: policies and procedures

The **National Programme of the Policy for Territorial Ordinance** was introduced in September 2007. It is a nationwide policy which is implemented by municipalities. The policy creates a framework for the development of the Portuguese territory, with a new urban and rural organisation and the implementation of various territorial management tools. It aims at establishing measures to cooperate with other EU countries, in order to promote a unified EU territorial organisation.

This policy will interact with other strategic instruments, namely with the **National Strategic Reference Programme (QREN)** for the period 2007-2013, through the definition of general orientation, that will develop through the interaction of specific objectives and priority measures, and also, it foresees the coordination of the territorial organisation.

The main instruments of the policy consist in:

- Promoting and stimulating the quality of architecture and landscape in the urban and rural environment;
- Preparing and implementing the strategic plan for housing;
- Concluding the special programme of relocation;
- Reinforcing solidarity and social actions.

Given the recent introduction of the policy, there has been no formal evaluation of its results.

Procedures

The Housing sector within municipalities is regulated by Municipal directive plans (PDM), which define housing development strategies. Municipal regulations define standards and maximum advance indexes, together with the occasional adoption of best practice manuals.

The majority of housing developments is of private initiative, with occasional public-private partnerships, especially in the case of social housing and public works which cannot be entirely supported by public funding. Developers generally do not participate in the planning process, but only partake in the final development plans.

C.3. Urban development: policies and procedures

POLIS – Urban and environmental development programme for cities was introduced in May 2000 by the National authority, and is to be implemented by local authorities. The policy is aimed at mobilising the enhancement of initiatives for the urban and environmental development of cities.

The main objective of this policy consists in the improvement of the cities' quality of life through urban and environmental interventions that improve the attractiveness and competitiveness of urban regions, which have a predominant role in structuring the urban national system.

Key concepts used within POLIS are:

- Green city: environmental improvement of urban areas (implementation of ecological runways connecting different urban zones);
- Digital city: implementation of wireless hotspots to improve internet access for city inhabitants;
- Knowledge and entertainment city: construction of new scientific and technological infrastructures and new cultural spaces;
- Inter-generation city: avoid urban space segmentation by age or social groups.

Other key issues within POLIS concern the rehabilitation of existing housing stock within urban centres, and the reorganisation of traffic.

The principal tools for the implementation of the policy are Urban design plans, which can be redefined in case of necessity through the policy. Interactions between local authorities are regulated by a set of procedures specifying the obligations of each intervenient and the corresponding deadlines. A policy coordination department was created with the intent of collecting the experiences from implemented projects in order to enhance the global policy.

C.4. Urban structure and existing housing stock

The **urban structure** of major Portuguese cities is based on a dense city core, hosting cultural, administrative and touristic activities, and peripheral areas where prevalent residential and productive functions are dislocated. As in most centres with this

kind of organisation, main problems concern inner-city desertification (with a large share of building in need of renovation), excessive building activity in suburban areas, with subsequent sprawl which endangers the natural landscape, also minimising the presence of green and public spaces for community use.

Public transport is mainly based on buses, whereas the two main cities (Lisbon and Porto) also have subway and tram networks. Public transport networks tend however to be poorly interrelated.

Residential developments are designed according to various types of urban schemes, with few cases of mixed development. Lack of neighbourhood-level green spaces and the poor relationship between private developments and public spaces tend to produce fragmentation between the different functions and activities. Parking spaces, attached to residential buildings, are organised in various solutions; in historic neighbourhoods, availability of parking spaces is naturally a problem. Housing construction tends to rely on traditional building techniques, mainly with reinforced concrete structure, double-pane brick masonry walls with air gap insulation, tilted roof. Construction companies are of general nature, not only focusing on housing.

Nationwide, residential buildings in Portugal have been built 38% between 1971 and 1990, 20% after 1990. Given the comparatively young age of the housing stock, only about 20% are in need of significant renovation. Of the overall housing stock (5.575k units), 54% are single-family units, 46% collective housing. Of these, about 85% are offered by the private market. Current housing market is able to guarantee affordable housing, especially since a vast percentage of housing rents have been frozen for several years due to rent control policies. At the moment, there is no housing shortage.

C.5. Sustainability and energy efficiency: policies and procedures

The **SCE – National System for Buildings Energy Certification and Indoor Air Quality (Law 78/2006)** is in its introductory phase, with a first step taken in July 2007 (only new buildings over 1000 m²), a second in July 2008 (all new buildings). Third step of implementation will be in January 2009, at that point covering all buildings. The initiating body was the EU with directive 2002/91/EC, and nation-wide application will be implemented by ADENE – National Energy Agency of Portugal. The policy is based on the reception of EU directive concerning the reduction of heating, cooling and hot water need.

The certification system is in its initial stages, so it is expected that over a certain period of time it will be more efficiently integrated with the market, with a general improvement in construction quality, in order to obtain better energy labels. At the moment, incentives offer a 30% tax reduction on any renewable energy equipment cost, up to a maximum of 777 €, as well as fiscal benefits for the implementation of photovoltaic panels. Furthermore, mandatory measures require the installation of solar thermal panels for domestic hot water for any new construction and for major renovations with appropriate solar orientation.

The SCE is a certification system based on the European EPBD directive, aiming at improving energy efficiency and indoor air quality, while reducing CO₂ emissions. It

also aims at identifying measures to improve building performance in both residential and service buildings. SCE will be implemented by experts trained by ADENE. Given the recent implementation of the policy, it is not possible to provide an assessment of its results.



Figure 5: Antas neighbourhood, Porto. Best practice new residential development

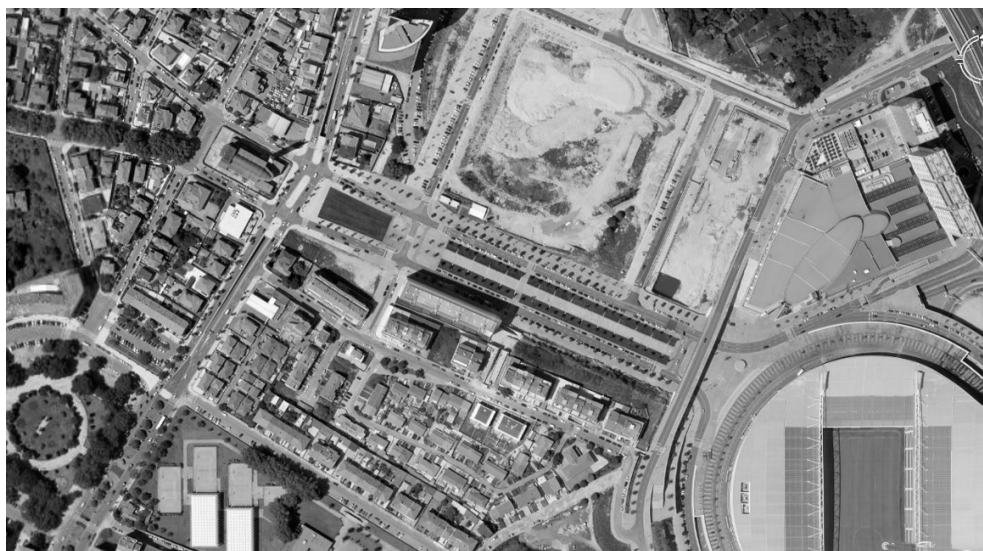


Figure 6: Parque Tejo neighbourhood, Lisbon. Best practice new residential development

D. Faculty of Architecture

Gdansk University of Technology – Poland

D.1. Partner description

Gdansk University of Technology is located in the city of Gdansk, in the Pomeranian Voivodeship. It is part of a larger conurbation together with the city of Gdynia and the smaller centre of Sopot, forming the so-called Tricity, which has a population of over 800.000 inhabitants. Gdansk's population is of approx. 458.000 people. The city's port has long represented the main infrastructure, fostering an economy dominated by ship-building.

Gdansk University of Technology has participated in a large number of EU funded programs, such as: INTERREG projects (INTERREG III B, INWATER3472583, Exploiting Inland Waterways for Regional Development; INTERREG III C, REGENERGY, Network of communities and regions developing innovative energetic solutions: REGENERGY); International SUBURBS projects focused on cities in Baltic region; Research and education projects supported both by Polish Committee of Scientific Research as well as international committees and organisations; Erasmus Intensive Programme "Bridging the City - Water in Architecture, Urban Spaces and Planning".

D.2. Urban governance: policies and procedures

The **Gdansk Development Strategy** was introduced in late 2004 by the Gdansk municipality to implement a future vision in which the city should become an attractive place to live, with a modern and competitive economy. It includes general and specific goals, among which are:

1) **Residents** (social development and improvement of the quality of life):

- Development of a knowledge-based society;
- Improvement of living conditions;
- Promotion of a healthy lifestyle;
- Counteraction of social exclusion;
- Protection of the natural environment.

2) **Economic development of the city:**

- Support aimed at the development of modern economic dynamics;
- Development of the maritime economy and logistics;
- Integration of the Gdansk Metropolis.

3) **Cultural development** (cultural heritage):

- Consolidation of the city's role as a centre of culture.

The Strategy includes 22 Operational Programmes, articulated with specific measures:

Health and environment:

Healthy Gdansk;
Green city of Gdansk;
Healthy water for Gdansk;
Sporty Gdansk;

Social and cultural development:

Gdansk of equal opportunities;
Educated Gdansk;
Safe Gdansk;
Gdansk, a European centre of culture;

Economic and industrial development:

Gdansk, a sea of tourist attractions;
Invest in Gdansk;
Entrepreneur-friendly Gdansk;

Urban development:

Gdansk revitalisation programme;
Hevelianum (historical fortress in city centre);
Gdansk of wide roads;
Metropolis of Gdansk;
Gdansk, the preferable residence;

Modern technologies:

e-Gdansk;
Modern technology of Gdansk;
Gdansk databank;

International relations:

Gdansk scientific thought in Europe;
Gdansk open to the sea;
International Gdansk.

The Strategy is implemented by the local government, and among its operational strategies housing covers an important role. Guidelines are provided for housing development at both city level. Guidelines are also set out for individual developments, often of very small size, thus resulting in a fragmented framework lacking strategic outlook for the whole city.

The **residential market** has undergone a strong expansion phase, which has prompted the birth of a large number of construction companies specialised in housing developments. These are the key stakeholders in the housing development sector, and some public-private partnership experiments in the social housing sector have been carried out but were unsuccessful: the local authority contributed land, but failed in involving developers to build social housing settlements due to the rapidly rising costs of building and the booming market.

The initiative for the drafting of development plans can come from both public and private side, since private subjects are entitled to propose masterplans. For this reason, private investors can easily influence public planning strategies, particularly in the case of large-scale projects. Masterplans are then subjected to public debate.

Local authorities detain most planning powers, and at regional level guidelines are being prepared to orient developments, in collaboration with representatives of municipal administrations. These, however, lack direct action instruments to influence growth, e.g. preventing urban sprawl. Urban sprawl can in fact be considered the area's most urgent problem: Gdansk has planned new areas for its development, but these are in reality growing as isolated islands, with very poor connections with the city centre.

D.3. Urban development: policies and procedures

The **Gdansk Spatial Development Plan** has been introduced in 2007 by the City administration. It encloses the directions for the future spatial development of the city. It introduces guidelines for local development plans, and sector policies showing frameworks and indicators. Among its main objectives are:

- Filling-in of empty lots within consolidated areas, in particular next to the sea;
- Restriction of developments in green areas: building activity can only take place within the limits of land development plans;
- Compact-city strategy.

The Plan is a comprehensive tool focusing on many aspects of urban development, among which are:

- Settlement planning;
- Housing environment;
- Industrial areas;
- Mobility;
- Utilities (water, energy, waste);
- Urban regeneration.

The aim thus consists in developing the inner city's existing spaces including brown-fields. Since not enough surface is available to fulfil all goals set out, the occupation of green areas will necessarily take place. To this purpose, two new districts have been identified: a residential area to the South and a multi-functional development to the West. The process of defining these new developments has been initiated and is still ongoing. This part of the Plan has been widely debated, since it sets the problem of creating urban – rather than sub-urban – developments in a market-oriented society. Housing is a central topic in the Plan, since residential areas are present in all districts, with greater concentration in the Wrzeszcz, Oliwa, South district and historic centre. The supply of residential areas in Gdansk is large, but only 29% of it is located in existing urban structures. Nevertheless, in terms of EU funding for urban regeneration, only 3% is allocated to the improvement of housing stock.

The Plan also establishes policies for **environmental protection** through the OSTAB – City System of Bioactive Areas, which aims at reinforcing the ecological framework in both existing structures and in the development of new urban areas.

New housing developments are planned by the Municipality, which drafts masterplans (in smaller towns, masterplans are outsourced to private designers). The Regional administration and other interested authorities (e.g. Maritime agency in case of developments in coastal areas) oversee planning activities. Building designs require a preliminary authorisation and a final authorisation to verify consistency with submitted plans, which is given by a specific agency.

D.4. Urban structure and existing housing stock

The **urban structure of Gdansk** is a linear agglomeration, situated between two natural barriers: the sea to the North and the protected forestal area, the Tricity Landscape Park. It is mostly a compact city, although recent developments have accentuated the city's spread into the neighbouring countryside. The historic centre still represents the city core, hosting administrative, educational, touristic and cultural structures. Major residential areas are located in the inner city, but heavy peripheric residential development is gradually shifting the balance to the suburban belt: 70% of new



Figure 7: Osiedle Kolorowe, new private development in the Southern district of Gdansk



Figure 8: Osowa - Planeta, new private development in the Western district of Gdansk

housing investments, together with large shopping malls, are located in the suburbs. This is reducing inner-city vitality in all centres of the Tricity urban aggregation (Gdansk, Sopot, Gdynia), with the exception of Sopot (one of the three historical centres within the metropolitan area).

Productive areas are strongly linked to marine industry, with two ports located on both sides of the Vistula river (the inner port and the modern deep-sea Northern port). Many industries (shipyards, refineries and other chemical industries) heavily rely on the port as basic infrastructure. After the economic crisis of the 1990's, this sector is start-

ing to reclaim its position, and the City is searching for a diversification of economic functions. New industrial developments, mostly dedicated to advanced technologies and logistics are located near the airport, in the West district of Gdansk and in the industrial area of Kokoszeki.

Public transport is generally insufficient, and residents of new residential districts must rely heavily on private car transportation. An efficient light rail system connects the core of the city's linear agglomeration.

New neighbourhood structures generally follow a speculative model, with developers (or more rarely housing cooperatives) buying land and building up to the maximum allowed density. Public services are planned by the Municipality, but often the scarcity of funds impairs the realisation of schools and other public facilities; furthermore, low demand does not allow the development of structures for commercial services. As a result, most new neighbourhoods totally lack any functional mixture. Public and green spaces (which are set by City standards to 8 m² per inhabitant at walking distance) are generally undersized, even in the case of gated communities. Parking spaces in new developments are usually organised below street level, but current standards of 1 car space / unit is generally too low. Building construction is mainly reinforced concrete frame and brick walls.

Existing housing stock is made up mostly of multi-family buildings (82%), up to 14 floors in the inner city, up to 5 floors in suburban areas, which generally have a lower density and also host single-family houses. 22,4% of dwellings was built before 1945, 12,5% after 1989 (mostly in suburban areas). City-owned housing estates, mostly dating back to the 1970's, are in bad conditions: greatest problems are however of social and functional rather than physical nature. A nationwide housing shortage can be recorded (nearly 3% of dwellings host two or more households). Home ownership in Gdansk is about 20% municipal (10% outside city centre), 35% private, 43% cooperatives. In Poland, the housing market is largely of private nature, with individual investors covering 53%, developers 35%, housing cooperatives 6% of the overall stock; percentages in Gdansk are similar, with a lower amount of individual investors.

D.5. Sustainability and energy efficiency: policies and procedures

The **Energy Policy for Poland to 2030** is, at the most general level, a nationwide policy, still in the process of being elaborated by the Ministry of Environment, receiving EU 2002/91 directive on building energy efficiency. It was to be introduced by January 2006, but its implementation has been delayed until January 2009. Implementing bodies will be the Ministry of Economy, the Ministry of Infrastructures, and the Polish National Energy Conservation Agency. The aim of the policy is to increase energy safety in the country, while promoting economic competitiveness in energy efficiency as well as environmental protection. Main objectives are:

- Increase in building energy efficiency;
- Promotion of combined heat and power (CHP) cogeneration;
- Use of residual heat;
- Reduction of energy increase in households (heat and electricity), through the

promotion of energy efficient production and consumption models, technologies and equipment.

There are no instruments for policy implementation at the moment, except the construction permit with some energy requirements, since there is no possibility of exercising control during and after construction.

Although the policy is in the process of being established, some economic barriers already seem very evident, such as:

- Financial limits of end-users (limited investment possibilities, limited availability of loans);
- Limited access to preferential financing sources;
- Lack of third-party financing proliferation;
- High credit costs, causing insufficient economical effectiveness of investments;
- Passive approach of the banking sector;
- Long procedures associated with fundraising.

Besides economic barriers, at the moment there is little social understanding of sustainability requirements. As an example, environmental impact assessment, which is required for development plans, is currently carried out by the same teams drafting the plans rather than by third parties; it is thus treated as any other document in the planning process, without any real possibility of limiting environmental damage.

Incentives are provided through the 1998 bill supporting thermal modernisation actions. This bill aims at:

- Decreasing energy use for heating and water in different types of buildings (including residential);
- Decreasing energy losses in networks and sources;
- Promoting the conversion from conventional to renewable energy sources.

A new bill is being currently proposed, concerning the thermo-modernisation of old building stock. In this case, there will be incentives for users who wish to undertake renovations of pre-1961 multifamily buildings, with a 20% of loans being paid by Government funds.

Energy certification has been introduced nationwide in 2004, so in September 2007 Construction Laws were modified in order to allow the implementation of the EPBD directive. Starting January 2009, it will be obligatory to prepare Energy Performance Certificates for some types of buildings.

New regulations which are in the process of being introduced include:

- Further modifications to 2004 Energy certification policy;
- New standards to calculate the energy characteristics of new housing;
- About 30 new norms, including PN-EN ISO 13790:2006 – Energy efficiency of buildings, PN-EN ISO 15927 (1-6) – Energy characteristics of buildings, and to calculate and present climatic data.

Local regulations require the adoption of national standards, but they rarely go beyond national requests, as in the case of Gdansk City, which requires rainwater recycling strategies to be implemented in new development plans (this regulation is however not enforced).

E. Reggio Calabria

City of Reggio Calabria - Italy

Department of Building Art, Science and Technique

"Mediterranea" University of Reggio Calabria

E.1. Partner description

The City of Reggio Calabria is the regional capital, and is located in front of the strait of Messina. Its population amounts to 185.577 inhabitants, whereas the larger urban area comprises approx. 260.000 people. Reggio Calabria is the centre of an important touristic and cultural area, and hosts a large university. Although its foundation dates back to the 8th Century b.C., most of the urban structure is based on the reconstruction undertaken after the 1908 earthquake, which destroyed most of the historic settlement. The particular orographic conformation of the landscape has produced its peculiar form, squeezed between the Aspromonte hills and the sea.

Like most of its surrounding region, Reggio Calabria today lacks a well-developed industrial and infrastructural system, which in turn gives place to slow economic development. The tourist sector, on the other hand, is particularly flourishing, and has been rising steadily during the past decades.

The Department of Building Art, Science and Technique includes faculty members from various areas of planning and architecture, and has been very active on the local territory in cooperation with the City and Municipalities.

In particular, between 2000 and 2002 it set up a Pilot project for urban renovation of peripheral areas in Reggio Calabria.

E.2. Urban governance: policies and procedures

The **Regional Planning Law 19/2002** was adopted in April 2002 and deals with norms regulating the protection, government and use of territory. It was initiated by Region Calabria, with the aim of disciplining regional and urban planning, territorial protection, while regulating competences and procedures of pertinent administrative functions at the regional level. It defines priorities and objectives of planning processes, in relation to the specific characters and potentialities of the regional territory, defining instruments and actions for the control of these activities.

Central to the law is the will to establish a participated system of territorial programming and planning, involving all public and private subjects, such as:

- Public authorities in charge of managing territorial and urban planning instruments;
- Public authorities in charge of protecting territorial resources;

- Private stakeholders exercising activities related to the local territory, and more specifically in relation to mobility, energy, tourism, trade, and other relevant economic activities.

These objectives are being pursued in order to make urban development “sustainable”, reducing the impact of new settlements, while enhancing urban quality through an appropriate use of environmental, territorial, and cultural resources. To this end, inner-city revitalisation processes are privileged, aiming at reducing territorial exclusion, reserving the use of new land only when no other alternatives are to be found. The primary instrument for territorial development and control is the Regional Territorial Coordination Plan (QTR), drafted by the Regional authority, which defines interdependencies between the environmental, built and relational systems. Main objectives for this plan are:

- Territorial organisation;
- Protection and valorisation of the natural landscape;
- Consistency between sector strategies;
- Activation of sustainable development plans for territory and cities;
- Planning guidelines for local authorities.

The **Regional Territorial Coordination Plan** represents a platform for the joint operation of Region, Province, mountain communities, municipalities, and parks. In some strategic cases, such as the Gioia Tauro – Reggio Calabria system, the process will also involve National and EU authorities. All projects coordinated within the plan will have as a priority competitiveness, cohesion, and sustainability in regional development, in relation to the Regional and National strategic development plans for 2007-2013.

At the operational level, the main implementation tool is represented by Project laboratories, promoted by the Region and open to the participation of provinces and municipalities. Among their priorities are projects for public space, and the reconnection of urban and environmental systems.

Operational Programme Calabria Region ERDF 2007-2013

Urban development plan – Axis VIII: Cities, urban areas and territorial systems

This programme was introduced in November 2007 by the Managing authority Region Calabria. It fosters the implementation of integrated projects for urban and territorial development, supporting territorial cohesion, competitiveness, attractiveness and quality of life in urban areas through the introduction of structural innovations in the organisational and relational systems. Its main objectives are:

- Environmental reclamation and social / economic regeneration of city cores;
- Urban renovation of degraded neighbourhoods;
- Strengthening of sustainable mobility systems in urban areas.

nection with existing material and immaterial networks. In particular, Action line 8.1.2.1 establishes four main goals:

- Requalification, reorganisation and valorisation of unused or underused infra-structures;
- Renovation of underused areas and buildings of public property;
- Requalification of urban waterfronts;
- Actions to improve services and the quality of networks which cannot be fulfilled by private subjects in market conditions.

Action line 8.2.1.4 is specifically addressed at the revitalisation of historic towns, with the specific aim of repopulating derelict areas, through incentives given to inhabitants.

E.3. Urban development: policies and procedures

The **Operational Programme Calabria Region ERDF 2007-2013** also addresses issues connected with urban development, promoting the actions specifically aimed at urban regeneration, which are outlined in strategic plans for each major Municipality.

The **Strategic Plan for Reggio Calabria 2007-2013 (PSRC)** is currently in the process of being approved by the Municipality. It is aimed at highlighting specific objectives and actions to be undertaken, through the joint commitment of public and private stakeholders. General goals are:

- Improvement of urban quality through the realisation of green areas, the renovation of existing estates, and enhancing places for social interaction (squares, pedestrian areas, natural shopping areas, etc.);
- Enhancement of environmental resources, archaeological areas, and the marine assets of the city;
- Implementation of programmes for the enhancement of waste treatment and the reduction of energy consumptions;
- Increase in cultural, leisure and sport activities.

Procedures

The Municipality is responsible for housing stock development, partially sharing competences with the provincial and regional authorities. There are no specific guidelines for housing development, except the general indications contained in the 2002 Regional Planning Law, mainly concerning maximum developments. Public-private partnerships in urban development are not frequent, and private stakeholders generally limit their action to the construction phase only. Private developers are thus excluded from the planning process.

Contemporary housing developments are almost exclusively of private initiative. Construction companies are generally of very small size, with very low specialisation, and do not have any will nor ability to engage technological innovation. Public housing estates are managed by the public company ATERP.



Figure 9: Tre Mulini and San Brunello public housing estates in the centre of Reggio Calabria, built during the post-war period



Figure 10: Arghillà residential neighbourhood in the Northern periphery of Reggio Calabria, built late 1990's

E.4. Urban structure and existing housing stock

The **urban structure of Reggio Calabria** can be considered an extended conglomerate, which is strongly determined by the geographical configuration of the territory, closed between the sea and the steep hills of the Aspromonte mountains. The city core, which is the historic nucleus of the city, originally hosted all representative function (town hall, court of justice, provincial seat) as well as residential and service activities. From the second half of the 1980's, there has been a gradual decentralisa-

tion of main functions, with the construction of new directional centres in the peripheral areas of the city (such as the CEDIR complex). Today, main residential areas are located in the peripheral belt, and this trend is also confirmed by the General Development Plan. Productive areas are located outside the city centre, and most productive activities once found within the city have been relocated to external areas, such as the OMECA district.

Public transport in the Reggio Calabria area is mainly based on buses, with a widespread connection network which is nevertheless lacking intermodal transport nodes (connection with sea and rail lines).

New residential developments, regulated by the General Development Plan, are usually low-density settlements mainly composed of single-family dwellings, thus with an extensive use of land. Few of the new developments are mixed-use, and there is a strong difference between post-war developments (such as Tre Mulini and San Brunello), and contemporary private developments, such as the Arghillà neighbourhood, in the city's northern outskirts..

Green spaces within the urban area of Reggio Calabria are currently undersized, and also lack appropriate maintenance. Within the Strategic Plan for Reggio Calabria, action line 2.2 aims at the increase and enhancement of existing green areas, through the realisation of "green strips" along rivers, torrents, and valleys connecting the coastline with the interior landscape.

Existing housing stock was largely built during post-war reconstruction. During that period, the strong housing demand led to the realisation of several large public housing estates, such as the Tre Mulini complex. Two main building typologies were used: line houses for collective housing, and single-family buildings for private developments. In terms of building construction, three distinct periods can be identified:

- 1908-1957: mainly reinforced concrete structures with brick-pane walls. Vertical elements were very close to each other, often framing windows. Roofs were either terraced or tilted, without thermal insulation. Building height could not exceed 10 meters, thus constraining the number of floors to maximum two including ground floor. Single-pane glass wood windows;
- 1957-1985: reinforced concrete frame with hollow brick walls. Terraced roofs lacking thermal insulation. Single-pane glass aluminium windows;
- After 1985: reinforced concrete frame with insulated perimeter walls. Terraced or tilted insulated roof. Double-pane glass aluminium or wood windows.

A number of housing renewal processes have been carried out through the tools of Neighbourhood contracts, mainly focusing on public housing complexes such as the Tre Mulini neighbourhoods.

E.5. Sustainability and energy efficiency: policies and procedures

The **Strategic Plan for Reggio Calabria (PSRC)**, which is in the process of being approved, contains instruments and measures aimed at fostering environmental and building sustainability. It was drafted by the Municipality of Reggio Calabria, and it is addressed at the municipal territory. Action line 2.2.3 addresses the "Reduction of environmental pressure, with specific reference to energy consumption". The main points of the action line are:

- Renovation of the public lighting system, with the introduction of low-consumption installation;
- Renovation of lighting system in public buildings;
- Installation of photovoltaic panels on the roofs of public schools and buildings.

The Strategic Plan coordinates the use of various financial resources, amounting to several tens millions Euros.

Currently, there are no established tools for the assessment and certification of energetic performance in urban planning and building activity. Some very general guidelines are contained in the Regional Planning Law of 2002.

The ITACA protocol for environmental assessment, which is being adopted on a nationwide basis, is available, but its application is left to private initiative and is not mandatory. Current building regulations in Reggio Calabria do not include indications related to environmental performance.

F. Sheffield City Council

United Kingdom

F.1. Partner description

Sheffield is located in South Yorkshire, and counts today with an estimated population of 525.800 people, whereas the wider Sheffield urban area reaches 640.720 inhabitants. The 19th Century steel industry declined during the 1970's, but in recent years the overall economy has experienced a steady growth of about 5% annually, higher than the region's average.

Geographically, Sheffield is located at the confluence of five rivers, with much of the city built on hillside with view on the city centre or on the countryside. This has led traditional Sheffield urban planning to be very reliant on the establishment of views and the relationship with the natural landscape. Furthermore, the urban territory enjoys a vast presence of green spaces.

In recent years, the Sheffield City Council has promoted major inner-city revitalisation initiatives, which were guided through the drafting of a Urban Design Compendium. This allowed the central areas of Sheffield to regain momentum as major cultural, service, educational, and leisure attractions.

F.2. Urban governance: policies and procedures

The **Regional Spatial Strategy** ("The Yorkshire and Humber Plan – Regional Spatial Strategy to 2026") has been recently introduced (May 2008) by the Yorkshire and Humber Assembly. It forms a part of the development plan for each of the local authorities in South Yorkshire. It is a broad development strategy at regional level, setting out priorities in terms of location and scale of development, including:

- Economic development;
- Housing (it also specifies the additional dwelling units required per year based on population growth);
- Transport and communication;
- Environment (including water, minerals and waste, energy generation and use);
- Tourism and leisure;
- Urban and rural regeneration.

Given its very recent introduction, the RSS has not had any concrete effects, and implementation phase is just beginning.

The **Planning Policy Statement 12 (PPS12): Local Development Plans** was introduced in 2004 by the Department for Communities and Local Government (DCLG) and updated in 2008. It is accompanied by a Plan-making Manual, and its primary goal is explaining what local spatial planning is, and how it benefits communities. It also sets out what the key ingredients of local spatial plans are and the key government

policies on how they should be prepared. It should be taken into account by local planning authorities in preparing development plan documents.

PPS12 requires local planners to set up a number of documents, such as:

- Sustainable Community Strategy (SCS): it sets out the strategic vision for a place and is linked into overarching regional strategies. It provides the vehicle for considering and deciding how to address difficult cross-cutting issues such as economic development, social exclusion and climate change;
- Local Area Agreements (LAA): they are normally three-year agreements based on SCS, setting out improvement targets for the priorities of a local area. LAAs are made between the Central Government, and local authorities together with key private and third-sector stakeholders.
- Local Development Framework (LDF): it is the collection of local development documents produced by the local planning authority which collectively delivers the spatial planning strategy for its area. The Core Strategy is the key plan within the Local Development Framework.

The planning system therefore both offers and requires the development of a stronger leadership role for local authorities and elected members, built on collaboration through strategic partnerships and accountable delivery through the LAA.

F.3. Urban development: policies and procedures

Given the framework of PPS12, the Sheffield Development Framework 2009-2012, initiated by the Sheffield City Council, is in the process of being established as a collection of documents to guide the planning department. The Core Strategy will be completed in April 2009. Other key documents are the City Development Sites and City Policies.

Planning Policy Statement 3 (PPS3): Housing was introduced in 2007 by the DCLG, underpinning the delivery of the Government's strategic housing policy objectives to ensure that "everyone has the opportunity to live in a decent home, which they can afford in a community where they want to live". PPS3 is the key national planning guidance on housing delivery. Its major emphasis is on delivering change in housing supply and increasing affordability. The document gives guidance on how issues such as housing density and mix, affordability, and housing delivery should be dealt with in Regional Spatial Strategies and Local Development frameworks. The main objectives of PPS3 are:

- Achieve a wider choice of quality homes;
- Widen opportunities for home ownership, but also provide quality homes for those who cannot afford to buy;
- Improve affordability by increasing housing supply;
- Create sustainable, mixed inclusive communities in all areas.

Regarding new housing developments and redevelopments, which are controlled by the local authority, about 75% of the overall city area falls into the so-called "Housing Market Renewal Areas". Within these areas, responsibility for housing development is

given to Neighbourhood Teams, whereas outside it is up to landowners and developers. Building within these designated areas on Sheffield City Council (SCC) land requires the achievement of higher quality standards, which are laid out in the Developer Manual. The three standards are “Sheffield”, “Silver” and “Gold”, each reaching a different level of quality above required building regulation. In these cases, a detailed brief is usually produced, improving the quality and features within the development by reducing the receipt for the land – in other words effectively subsidising the development. A Local Housing Company is in the process of being established, involving the local authority in working in partnership with developers. Land uses are set out in the Unitary Development Plan (UDP), which is going to be replaced by the Sheffield Development Framework. Design coding has had a limited application, in particular in the redevelopment of the Scowerdons, Weakland and Newstead (SWaN) Estates.

In the majority of cases, new housing developments are undertaken by private developers, who also manage the maintenance of built complexes. In general, the Local Authority commissions masterplans; private developers then produce a proposal to fit into the masterplan entering the Development Control process. Developers can participate in pre-planning discussions and during consultations, mainly at the urban level rather than at the strategic regional scale.

F.4. Urban structure and existing housing stock

The **urban structure of Sheffield** can be described as a series of villages which have merged as the city was growing. The majority of this growth (from 1900 onwards) consists in low-density garden suburbs. The city centre is compact, sitting on a gentle slope at the junction of a number of valleys. The hills and valleys have dictated that travel in the city is easiest from the centre to the countryside in a spoke-like pattern, whilst radial travel is extremely difficult. This emphasises the city centre as the focus of the urban area.

In recent years, Sheffield’s city centre has undergone an extensive renovation project, which was promoted by the development of the Urban Design Compendium, a manual setting out guidelines and best practices for the new designs located in the historic town. The Urban Design Compendium was produced by the Sheffield City Council, and its adoption has allowed the achievement of a remarkable level of quality inside the historic district.

Major residential areas stretch from the periphery of the city centre to the countryside, with the largest areas of new housing being located in the North, East and South, given the clearance of existing stock as part of the Housing Market Renewal programme. Productive areas are located along valley bottoms between the housing areas sitting on the hills. The valleys developed this use because steel industries required level grounds (provided by the flood plains) and flowing water for power (provided by the rivers).

Public transport is mainly based on buses, but many households within the city are car owners. The **Planning Policy Guidance 13 (PPG13): Transport**, introduced by the DCLG in 2001, provides indications regarding the development of public transport systems.



Figure 11: In the North of the city Fox Hill by Artisan Developers is a new style of housing for the suburban estates which pays reference to the vernacular of the neighbouring countryside.



Figure 12: Norfolk Park area regeneration is a large scale development of a cleared site

Neighbourhood structure is characterised by the presence of services in 400-800 m radiuses. Urban density tends to increase around transport nodes and local centres. Mixed developments are encouraged, although the presence of existing local facilities might discourage this kind of structure.

Neighbourhood-level green spaces are required to take up at least 10% of land; developers can otherwise contribute to a nearby open space. Parking spaces are organised in order to have a mixture of parking solutions within new developments, to

prevent monotony and improve the street scene.

Although previous negative experiences with prefabricated construction led to their use being banned on SCC-owned sites, currently an attempt is being made at reintroducing Modern Methods of Construction (MMC). Developers are very interested in prefabricated construction since it decreases costs and worksite duration. The SCC may also be able to encourage this trend, and adopt MCC through the Local Development Company which is being established in order to allow the Council to build properties in partnership with developers.

Existing housing stock is mainly made up of two distinct types of housing: terraced housing, 100-200 years old, and suburban housing, 40-70 years old. Sheffield has a variety of housing types: older housing tends to be Victorian terraces or villas, whereas the majority of other housing is short runs of terraces and semi-detached housing. Conditions of these buildings are generally good; all SCC-owned properties (about 64,000 homes) are currently being insulated to reduce fuel bills under the Decent Homes Programme.

Housing demand for 2007 highlighted a shortfall of 729 houses / year. For public housing, there is a waiting list with different priorities. About 90% of new housing developments are offered on the private market, 10% is public housing.

Masterplans are designed by external consultants employed by the relevant area teams with consultations from the Sheffield City Council Urban Design Team. Individual professionals charged with commissioning the work and steering groups carry out primary quality control over design, which must also obtain cabinet approval. Individual buildings are designed by teams employed by developers. Quality control over individual buildings is carried out by SCC Planning Development Control, using the nationwide process for assessing planning applications. Within Sheffield there are trials to use the Building for Life criteria as a tool to help the development control process achieve consistency and quality.

Processes of quality assessment include:

- SCC Internal Design Appraisal Process: a weekly meeting to discuss the latest planning application submissions amongst the SCC Urban Design and Conservation team;
- SCC Urban Design Panel: a monthly presentation to a number of architectural peers where design quality is assessed and feedback given to the design team.

F.5. Sustainability and energy efficiency: policies and procedures

Planning Policy Statement 1 (PPS1): Delivering Sustainable Development was introduced by the Department of Communities and Local Government in 2005. It sets out overarching policies on sustainable development.

Although PPS1 does not explicitly refer to the "carbon-zero" agenda, it does contain a set of key principles, the second of which focuses on regional and local planning authorities' duties to ensure that "development plans contribute to the global sustainability by addressing the causes and potential impact of climate change". The section on Protection and Enhancement of the Environment it urges that plans should "take

account of environmental issues”, and the section on the Prudent Use of Natural Resources emphasises, among others:

- Energy efficiency;
- The use of small-scale renewable energy, community heat and power schemes;
- Low carbon schemes in developments.

There is also a section on Design, which highlights that good design should, inter alia, “consider the direct and indirect impacts on the natural environment”, and that local planners should not stifle innovation.

PPS1: Planning and Climate Change is a supplement to PPS1: “Tomorrow’s Climate / Today’s Challenge”, introduced in December 2007. It states that “Tackling climate change is a key Government’s priority for the planning system”. It goes on to challenge developers: “Applicants for planning permissions should consider how well their proposals for development contribute to the Government’s ambition of a low-carbon economy and how well adapted they are for the expected effects of climate change”. It maintains that the UK is “on track to meet, and even exceed, its commitment under the Kyoto Protocol to reduce emissions of greenhouse gases to 12% below 1990 levels by 2008-2012”. It mentions the Climate Change Bill and the ambition to reduce by 26-32% below 1990 levels by 2020, and at least 60% by 2050. Despite all that, it still predicts “significant climate change” and identifies “an urgent need for action” and heralds the progressive tightening of Building Regulations (as set out in “Building a Greener Future”, 2007). The critical guidance is found in:

- Para 9: Key Planning Objectives;
- Para 10: Decision-making Principles;
- Para 12-17: Regional Spatial Strategy;
- Para 18-33: Local Development Documents;
- Para 38 and onwards: Determining Planning Applications.

Regarding energy certification, the **Code for Sustainable Homes** is a national system to increase the environmental standards for new homes. Buildings are rated 1-6 depending on their achievement. Level 3 has recently become compulsory for new buildings.

The **Commission for Architecture and the Built Environment – CABE** is promoting the **Building for Life protocol** as a way of evaluating the quality of design in both planning and built projects. The Building for Life approach asks twenty questions and sets standards depending on the number of questions which were positively answered.

4

4. In Synthesis: Tracing the Road for Hopus

A close reading of the situation outlined through the partner profiles, which do not cover the whole European spectrum but nevertheless account for certain trends which can be to some extent generalised, helps understand that not always the European perspective on urban development is fully received and implemented. The gap between what is considered good urban practice and the direction where major economic forces tend to go is sometimes wide; and some of the strategies suggested by EU philosophy hardly fit in specific economic and cultural contexts. This could be problematic to the ends of a wider implementation of design coding, which is a sophisticated urban governance tool. What follows is a synthetic account of the main problems and challenges which the Working Group will have to research and confront in order to set up a clear understanding of how – and if – design coding can become a Europe-wide tool for good-quality urban and architectural design.

4.1 Governance

Governance is presented as the future of European cities: a process which is more democratic, more flexible, and better able to respond to real needs than traditional government. In contemporary urban development, governance processes can certainly achieve high-level results, bringing together all the forces acting on the territory and allowing their needs to converge. This principle of joining forces replaces what governments were once able to do, when endowed with far larger political and economic power, and a much smaller need to make urban transformations universally accepted. Yet governance requires a number of basic conditions. Firstly, a mutual trust between public and private, between citizens and government. Governance implies true participation of stakeholders at all levels, and consultations are needed to assess the needs of everyone involved. In some contexts, this participatory process is not well seen, since in the face of new ideas of urban democracy the city's government is still a "top-down" process.

Furthermore, a balanced power relationship between local authorities and private investors is needed. In housing development, governance can be impaired by builders who exercise strong economic pressures on the city, and are therefore in the position to strongly influence the outcomes, imposing solutions which are based on profit max-

imisation only. In some contexts, public limitation to private undertaking is negatively perceived.

Since design coding is a governance tool, it is likely that its implementation could only be feasible in contexts where urban governance is already an established way. One of the tasks of Hopus will therefore be that of outlining the basic governance conditions which need to be in place in order to attempt the implementation of design coding.

4.2 Design coding and guidelines on housing

Hereto the basic assumption of this study has been that design coding is a good and productive way of regulating urban and architectural design, which can guarantee positive outcomes in terms of overall quality. Nevertheless, it is also true that design coding shares the advantages and disadvantages of all forms of regulation, even more since its participative nature gives it the character of “compromise”.

Regulations, if drafted and applied in the wrong way, can stifle innovation, force architectural expression and produce monotonous outcomes by reducing possibilities, complicate bureaucratic processes and, in some extreme cases, even lead to illegal building activity. The aims of design coding are exactly the opposite: to speed up and guarantee the outcomes of the process by providing a shared document for both private developers and local authorities, who should use the codes to assess submitted designs.

Each local situation, as highlighted by the partner profiles, sees however a great potential for the development and implementation of specific regulations for housing. In some cases, these regulations are already in place, and the challenge consists in implementing and reviewing them, trying to improve them as they are at work. In other cases, however, it seems that residential developments are pretty much left to the initiative of private investors. In these scenarios, the goal is also bound to the birth of a “culture of quality”, which should pave the way for the gradual introduction of advanced and flexible urban governance tools. Design coding could be the answer in the more advanced contexts, but in other cases it is more likely that intermediate instruments, such as more generic quality guidelines, could have a better chance of succeeding.

Another task for Hopus will therefore consist in surveying how design coding and similar forms of project guidance have been successfully or unsuccessfully applied throughout Europe. This will take in special consideration the process through which the implementation has taken place, in order to form a critical understanding of the advantages and disadvantages which design codes actually present.

4.3 Quality and the perception of quality

A close analysis of the present situation as emerges from the local profiles reveals one, almost self-evident truth: to build a city is quite easy, to build it well is a dauntingly difficult task. What is truly at stake is quality, since at times there can be a dichotomy between real urban and architectural quality and its perception.

Being based on quantifiable parameters, environmental efficiency can be quite easily measured, in terms of energy consumption, heating and cooling costs, water recovery, LCA, etc. Urban and architectural quality is far more elusive, since it is bound to problems of taste and – just like any other good on the market – of fashion. If the public perceives that living in suburban sprawls is good and fashionable, any compact-city policy will have a hard time gaining attention. Since in most of Europe housing is marketed by private investors, it's clear that the idea of quality which is vehicled can be distorted by commercial demands.

To be able to influence this phenomenon, urban and architectural quality must become a shared and transparent factor, no longer pertaining to specialists only, but to the wider public also. End-users should be fully informed of what they are buying, no less than when they buy vegetables or meat.

A further task which Hopus could thus set itself is to outline a system of European urban and architectural quality labelling for housing developments. This should take in consideration sustainability standards, but also specific parameters bound to standards of good urban and architectural design, variable depending on local contexts and understanding of quality.

4.4 Local actions

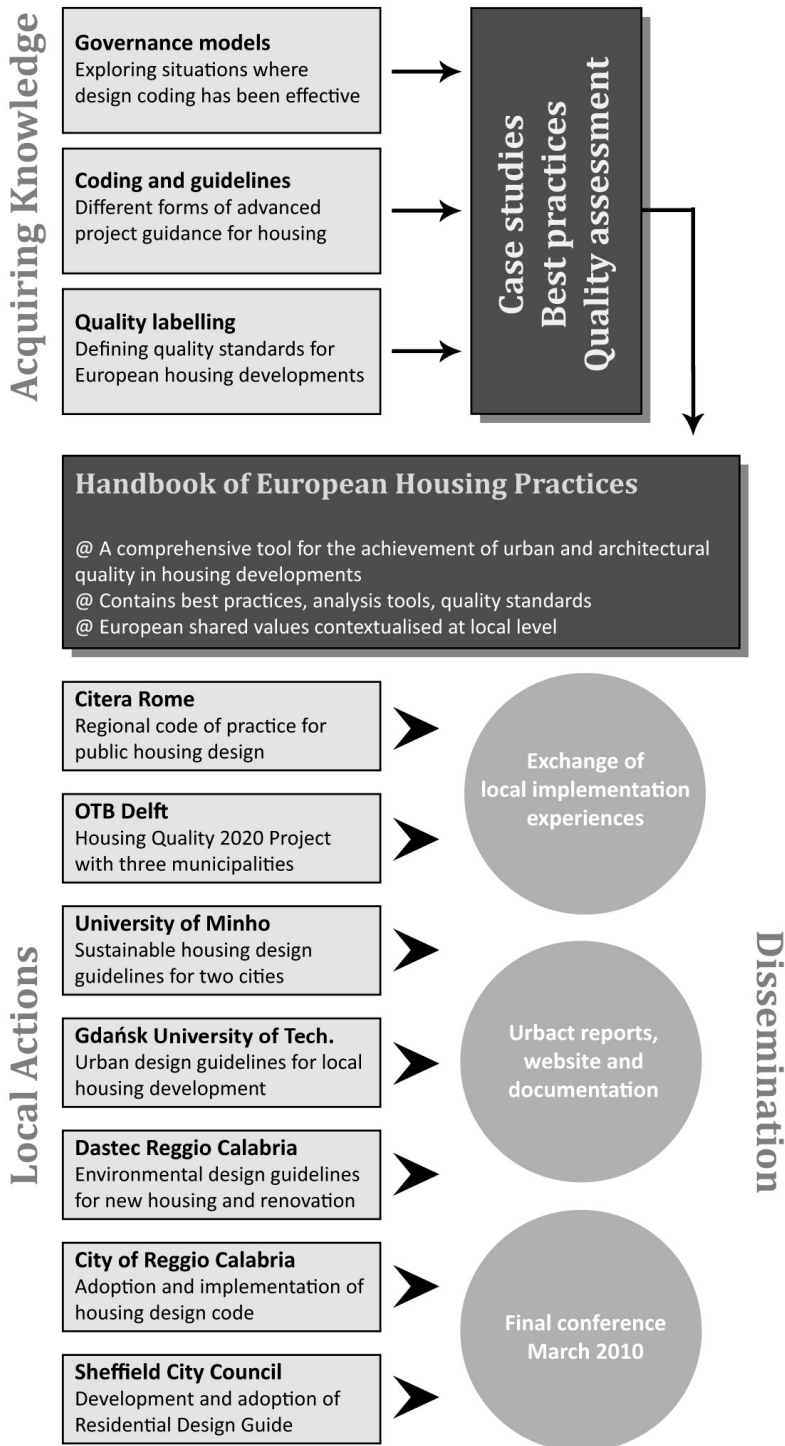
Local actions lie at the heart of URBACT, and each project partner is committed to setting up such actions to obtain the most effective results. The situations are quite different, and thus the results will also be distinct in nature.

The Lead partner, Citera, "Sapienza" University of Rome, is working in a context where first steps towards the introduction of quality guidelines for public housing have already been taken. Nevertheless, a certain resistance can be found in both local authorities and private stakeholders. In addition, different administrative levels (City Administration, Regional Administration) are not at the same point in their action for the promotion of sustainable building. Since Citera has been actively involved in the creation of the city guidelines, its task will consist in promoting their fullest possible implementation, and in making pressure for the adoption of similar guidelines at regional level.

OTB at Delft University of Technology acts in a context where quality in housing is already a well-established standard, and is working together with local administrations (Rotterdam, The Hague, and Utrecht) to promote the development of advanced guidelines with specific focus on sustainability, the HQ 2020 program. In this case, Hopus will serve to strengthen activities, involving other stakeholders in the process leading to the adoption of these guidelines.

The Department of Civil Engineering at University of Minho, which is specifically working on energy certification for buildings, is in a transition context where quality standards for sustainable design are recognised but not yet implemented. Together with two municipalities, Guimarães and Barcelos, the goal is to develop and experimental set of guidelines for housing sustainability, a specific design code aimed at improving building performance.

Project partner's Gdansk University of Technology local situation is perhaps the one



where quality standards for housing are still most deficient. Private investors develop vast new housing estates without any form of public orientation and control. In this case, the introduction of guidelines is perhaps not sufficient, and there is an urgent need to raise awareness of this backwardness. Hopus actions will therefore be more concentrated on promoting a culture of quality urbanism and architectural design, in order to implement, at a later stage, basic guidelines for design.

Dastec – University of Reggio Calabria acts in a local context where sustainability standards at national and local level are not lacking, yet there are great difficulties in implementing them given the slow economic growth of the region. Another specific problem is bound to the small amount of new building which is realised in face of the great necessity of renovating and retrofitting existing housing stock. Since work has been previously carried out with success in this field by the Department, the local action focus will be on the development of guidelines for energy efficiency for both new housing and building renovation.

The City of Reggio Calabria will focus on a different aspect within the same context: engaging private stakeholders, in particular builder's and industrial associations, in order to promote a culture of quality in urban and architectural design as well as sustainability standards, by implementing existing regulations. Working in close collaboration with the University, they will thus provide strategic support for the adoption of the housing design code. A further goal will consist in establishing joint actions with regional authorities, in order to coordinate efforts on the planning and programming of urban development.

Finally, Sheffield City Council, which has previously produced an interesting and efficient design code for urban renovation, the "Urban Design Compendium", will draft a further guidance document intended for residential developments, the Sheffield Residential Design Guide. This is meant to promote urban and architectural quality, character and identity in new housing developments within Sheffield, following a well-established working methodology which involves a wide number of public and private stakeholders.

Each partner will provide the entire working group with feedback on the local activities and their effects; this, in turn, will become a fundamental exchange and learning process for all partners, who will be able to capitalise from the direct experience of group members.

4.5 Knowledge and dissemination

The partner profiles highlight, through their partial yet significant coverage, a wide range of different situations in terms of urban governance, development procedures, and sustainability standards. Several of these have also already witnessed the application of advanced project guidance in housing developments: capitalising these experiences is one of the main tasks which Hopus sets itself.

Acquiring and disseminating this knowledge base will take place under different forms. In the first place, given the particular structure of the working group, which is made up by five research centres and two local administrations, it is clear that there will be a strong focus on the scientific aspect of the research, where the two cities could pro-

vide an observation ground for the group's ongoing activities.

Another aspect should be connected with education, allowing the results of research to be communicated to students in architecture and planning. This kind of activity, which could be part of an exchange among project partners but also other educational institutions, could offer young students the possibility of getting acquainted with advanced project guidance tools, giving them a new perspective of what design means in contemporary Europe.

Yet the most important result which Hopus should achieve, and which should connect together all previous aspects, is the production of a Handbook of European housing practices. This should be a rich, in-depth tool, dedicated to collecting and communicating all knowledge achieved through the working group's activities, in collaboration with all project partners and experts. It should go beyond the perspective of design coding, and include a wider survey of best practices connected to the task of achieving high quality in urban and architectural design for housing developments. Recapitulating the issues of governance, sustainability, and design together, it could form an important tool for local administrations throughout Europe, to sustain initiatives for the promotion of housing quality in relation to urban, architectural and environmental design.

4.6 Conclusion

In conclusion, as a working group Hopus is setting itself a very ambitious task: that of tracing a common line of quality standards for housing development in Europe. The intrinsic difficulty lies in the fact that this line is elusive, since housing, more than all other forms of architecture, gathers the specific realities of places and societies, expressing them in urban structures and buildings: yet this makes the challenge even more fascinating.

Finding this common line does not signify reducing the complexity of things: it is rather the attempt at identifying the foundations of urban and architectural design, at their points of convergence with all other skills and disciplines which are necessary to shape urban space. In order to do this, the vast array of issues regarding contemporary housing – from the very large to the very small scale of planning and design – will all have to be considered, understanding how they can become intelligent project guidelines, orienting the process from the outset to the very conclusion.