The 15th Annual Session of Global Forum on Human Settlements
Theme: Post-Pandemic Recovery and Transformation: Resilient Cities, Healthy Planet
Thematic Forum 5A: will healthy and anti-fragile cities emerge from the crisis

Healthy City Planning in Post-COVID Era

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Urban Planning and Public Health

Zoning: ensures sunlight and ventilation for buildings

Indicators: floor area ratio (FAR), building density, setback, etc.

China: regulatory detailed planning
Healthy City Movement

Global Healthy City Movement launched in the 1980s:

Rebuild the connection between urban planning and public health in multiple ways

The Movement highlights the key role of local governments in the promotion of global healthy cities initiated by WHO, and aims to transcend the traditional boundaries between agencies and participants who should participate in the process of health promotion.

Health must be a top priority for urban planners (WHO)

Healthy Turn in Urban Planning (Ann Forsyth)
Healthiness of the Urban Space

**Health Outcomes**

- **Chronic Non-Communicable Diseases**
  - Diabetes, Cardiovascular Disease, Cancer, Depression, etc.

- **Infectious Diseases**
  - Cholera, Yellow Fever, Plague, Ebola, SARS, etc.

**Active Lifestyle**

- Physical Activity
- Social Interaction

**Space Prevention and Intervention**

- Isolate the source of infection;
- Cut off transmission pathways of the virus;
- Protect vulnerable populations

**Urban Space**

- Central Business Districts, Industrial Parks, School Campuses, Neighborhoods, Streets, Green Space

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**Healthy City Version 3**
Theoretical Framework for Healthy City Planning: Chronic Non-communicable Diseases

Healthy City Planning

- Built Environment
  - Land Use
  - Urban Form
  - Road and Transportation System
  - Green and Open Space

Pathway of Spatial Intervention

- Pathway 1: Decrease pollution sources and its human exposure
- Pathway 2: Increase physical activity and social interaction
- Pathway 3: Provide accessible health facilities

Physical Health
Mental Health

Adopted by WHO and UN-Habitat, 《Integrating Health in Urban and Territorial Planning: A Source Book》2020

Pathway 1: GIS-based Spatial Analysis

Modeling:
Dependent variables: Lung cancer incidence of communities
Independent Variables: Land use, Road system, Development Density, Socio-economic determinants

Research outcomes and policy implication: Mixed-use, “small blocks and dense roads”, green and open spaces

Pathway 2: Performance Assessment of the Distribution of Community Sports Facility and Community Senior Healthcare Facilities from the Perspective of Health Equity

Evaluates the floor area per capita and the floor area per sq. meter of sports facilities and accessibility of senior healthcare facilities at the communities level.

Areas significantly lack sports and senior healthcare facilities:
Inner city, the areas at the urban periphery transformed from the industrial zone.

Pathway 3: Strategy of Urban Green Space Design for the Diversity of Physical Activity

Research questions: What are the site and vegetation characteristics that affect the diversity of physical activity? What are design strategies of the green space for physical activity?

Independent variables: site and vegetation characteristics. Dependent variables: level of physical activity diversity

Model 1: site characteristics, Model 2: vegetation characteristics, Model 3: Both

Site sampling: 30*30 meters square (about 0.1 ha); Amount: 40

Research outcomes:
• No significant correlation between morphological characteristics of space and the diversity of activity.
• Significant positive correlation between green coverage ratio and physical activity
• Significant negative correlation between Green Vision Rate and physical activity.

Planning strategies at regional, city and neighborhood level

Urbanization & Urban Development

Ecologic process
- Land use change
- Ecological patches and corridors
- Irrigation
- Urban heat island
- Food production

Social process
- Demographic characteristics (distribution, density, age structure, education)
- Built environment
- Transportation system
- Ageing of population
- Lifestyle change
- Pressure

Influential Process
- Frequency and intensity of interaction between pathogen, vector and host
- Reproduction of vectors

Three basic components of infectious disease prevention
- Infection sources
- Transmission
- Vulnerable population

Towards Healthy City
Analysis of Cluster Transmission of COVID-19 in China

- **Data sources:** websites of local governments, health committees, and media
- **Period:** from state to March 23rd, 2020
- **Categories:** household, social meeting, working, shopping, transportation, hospital
- **Total number:**
  - 288 cluster transmissions
  - 1603 cases
  - Average median 4 cases
Combination of anti-epidemic/epidemic in alternative care sites and facilities

- Location selection
- Involvement of doctors and nurses
- Data base

Normal time
- Planning
- Potential alternative care sites and facilities

Two series of design proposals
- Architecture
- Possible to transform
- Emergency plans

Public health emergency
- Increasing medical demand
- alternative care sites and facilities

During the Pandemic
- Planning
- Architecture

Same space
Different demands

- Space transform
- Structure check
- Air condition & ventilation
- Water supply and drainage
- Electronic system

Projection
Place selection
Layout
Urban Governance for Pandemic Prevention

Four cities:
Shanghai
Hangzhou
Chengdu
Zhengzhou
Integrating Health into Urban Planning:

1) National Territorial Spatial Planning System
2) 15-Minute Community Life Circle
3) Urban Design Guidelines
In May 2019, the CCP Central Committee and the state council released *Opinions regarding the Construction and Implementation of the National Territorial Spatial Planning System*.

Three types: master plan, regulatory plan and special planning. **Part of the Modernization of National Spatial Governance**

A spatial planning system attempts to transcend the boundaries of urban planning in the past and incorporates various types of land use, water systems, and urban and rural areas.
Establishing a “Public Health Unit” based on the 15-Minute Community Life Circle
Supports within walking distance

**Medical Support:**
- Healthcare Stations
- Community Health Service Centers

**Pension Services:**
- Community Nursing Homes
- Senior Daycare Centers
- Senior Activity Rooms

**Physical Activities:**
- Fitness Centers
- Outdoor Exercise Sites
- Playgrounds
- Swimming Pools

**Daily Health:** prevention and control for chronic non-communicable diseases

**Pandemic Outbreak:** measures towards public health emergencies

**Emergency Agencies:**
- Emergency Medical Service Centers
- Local Comprehensive Support Centers
- Call Centers for Epidemic Prevention
- Community Epidemic Prevention Stations

**Emergency Facilities:**
- Emergency Nursing Facilities
- Disaster-prevention Parks
- Medical Freezers
- Prepared Isolation Areas
- Antiviral Collection Points

Many countries have published healthy design guidelines:

The American Planning Association published the Health in All Planning Policies in 2014.

- New York: Active Design Guidelines: Promoting Physical Activity and Health in Design
- Los Angeles: Design a Healthy LA
- The Greater London Authority published the Mayor’s Transport Strategy in 2018, which emphasizes the importance of healthy street design.
- The public health department, planning department and transportation service department in Toronto jointly published the Active City: Designing for Health in 2014.

For Chinese Cities:

- Standards of Healthy District
- Healthy Planning Guidelines

‘Active Design’ refers to the spatial environment design that encourages people to participate in various physical activities (climbing, walking, cycling, etc.) and to eat healthily.
Healthy city planning and design:

Reduce health risks

Meet health demands

Better allocate health elements and resources

Achieve health equity

Evidence-based practice in healthy city planning:

1) Healthy National Territorial Spatial Planning of Gucun Township, Shanghai
2) Healthy-oriented urban planning in Huangpu District, Shanghai
3) Healthy-oriented Micro Urban Regeneration: Kailu New Village, Shanghai
Healthy-oriented Micro Urban Regeneration: Kailu New Village, Shanghai

World Bank Healthy Design Best Practice
Analysis for Health Risk and Resource

Wind field simulation

Sunlight simulation

红色：0-1小时   橙色：1-2小时   黄色：2-3小时   绿色：3-4小时   深绿：4-5小时   浅蓝：5-6小时
Interaction and Sharing: Health for all ages

- Zone for Teenagers
- Meditation zone
- Chess & Cards Playing Zone
- Vegetable gathering
- Parents-children Interaction Zone
- Running Trials
- Performance Stage
- Central Square
- Waiting Zone for Parents

邁向健康城市 Toward Healthy City
迈向健康城市 Toward Healthy City

激发孩子的创造力 LITTLE PLANNER

2019年6月29日下午1点
畅想美好愿景 共绘城市未来

组织单位：上海市杨浦区殷行街道同济大学建筑与城市规划学院
上海同济城市规划设计研究院有限公司

承办单位：杨浦区开鲁新村第一小学
上海晨阅文化艺术传播有限公司 健康城市实验室WLANlab

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Activities of ‘Little Planner’

Led by teachers and volunteers, these students visited the site, developed their own proposals and gave a presentation about their ideas. The hand-mold bricks made by the students would be used for the exhibition wall in the site.
Health Impact Assessment

- Revitalize 372 m² of areas for activities and 315m of fitness trails. Based on microclimate assessment, 48 m² of space for semi-outdoor activities is provided.
- Promote physical activity. 133 m² of open space for toddlers-oriented activities and 190 m² of open space for kids-oriented activities are added.
- Provide a waiting zone for parents
- Improve the quality of landscapes
- Consider the needs for emergencies and sheltering
- Preparations for potential infectious diseases
迈向健康城市 Toward Healthy City

健康城市规划与治理：
Healthy City Planning and Governance

实证研究
Empirical Research

规划设计实践
Planning and Design Practice

健康影响评估
Health Impact Assessment

健康城市实验室 Healthy City WLAN Lab
谢谢 Thank You

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如果规划的目的不是为了人类和星球的健康，那么是为了什么？