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훈련분야	도시계획		
훈련과제	선진도시 공공토지자원 민관협력 개발 사례 연구		
훈 련 국	영 국		
훈련기관	University of York		
보 고 내 용			
제목	Research on UK government PPP organization and PFI system to strengthen the feasibility of public land development in Korea	보고서 매수	52
내용요약	<p>PPP 공공용지 개발은 공공재정의 부담은 줄이면서 공공서비스를 적시에 공급할 수 있는 장점이 있기 때문에 세계 여러 나라에서는 PPP 방식을 채택하여 활용하고 있다.</p> <p>영국은 1970년대부터 국가적 인프라스트럭처를 민영화한 경험을 바탕으로 Planning Inspectorate 에서 UK Infrastructure Bank 에 이르기까지 다양한 PPP 조직을 정부에서 투자하고 운영하고 있으며, PFI 라는 민간금융 차입 제도를 탄생시켰다.</p> <p>Planning Inspectorate 에서 UK Infrastructure Bank 에 이르기까지 영국 정부는 PPP 의 중요성을 인식하고, 정부의 독자적 입장을 고수하지 않았다. 민간 부문의 의견을 받아들이고, 일관적인 정책을 추진하고 있다는데 대한민국의 공공용지 개발에</p>		

	<p>큰 시사점이 있다고 할 수 있다. 또한 PFI 라는 제도를 실행함에 있어, 민간의 여유 자금을 공공 영역으로 끌어들이는 바탕을 만들어 공공 재정을 보완하고 인프라스트럭처를 적절한 시기에 공급한 것 또한 의미가 있다고 할 수 있다.</p>
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붙임 1. 한글 요약본 1부,

2. 영문 원본 1부,

<붙임 1. 한글 요약본>

Research on UK government PPP
organization and PFI system to
strengthen the feasibility of public
land development in Korea

한국 공공용지 PPP 개발 활성화를 위한 영국 정부
PPP 조직과 PFI 제도 연구

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1. 서론

1.1 연구 배경 및 목적

PPP(Public Private Partnership)개발이란 하나의 사업 대상지에서 공동의 목표를 달성하기 위해 민간부문과 공공부문이 역량을 모아 수행하는 부동산 개발 및 운영 사업을 말한다. PPP 공공용지 개발은 공공재정 투입은 줄이면서 공공 서비스를 적시에 공급할 수 있는 장점이 있기 때문에 활성화의 필요성은 꾸준히 대두되어 왔다.

영국은 공공용지를 관리하는 데 있어, 유지 또는 보전 보다는 활용할 수 있는 자원으로 인식하고 이를 정부 차원에서 실행한 경험이 풍부하며, PPP 개발 방식 또한 다양하게 발전시켰다. 이에 따라, 공공재정 지원 없이 민간이 자금을 조달한다는 것, PPP 프로젝트 사업 추진 시 공공과 민간의 관계 설정, 사업 참여자별 리스크 부담 등의 방법은 현 시점에서 연구의 가치가 매우 높다고 할수 있다. 또한 공공용지를 관리하는 별도의 조직을 체계적으로 운영하며, 사회적 여건에 따라 역할이 확대 또는 축소되는 변화는 있으나 일관적으로 영국 정부의 모든 PPP 사업을 지원하고 있다.

이 연구의 목적은 영국 정부에서 운영 중인 PPP 관련 조직 현황과 PFI 제도를 살펴보고, 향후 대한 민국의 공공용지 개발 과정에서 실행력을 강화할 수 있는 시사점을 도출하는 데 있다.

1.2 연구 범위

영국의 국가적 인프라스트럭처 개발은 주로 PPP 방식으로 이루어지고 있다. 이 연구는 크게 영국의 PPP 관련 제도와 PPP 조직에 대해 탐구한다. 조직 측면에서는, 현재 존재하는 조직으로는, 1977 년에 설립되어 현재까지 운영 중인 Planning Inspectorate 와 2016 년에 설립된 Infrastructure Projects Authority, 2017 년에 설립된 National

Infrastructure Commission, 2020년 6월에 설립된 UKIB 등 4개의 조직을 살펴볼 것이다. 이미 운영을 종료하거나 타 기관에 통합된 기관으로는 PUK, IUK, MPA 이렇게 3개의 조직이 있다. 인프라스트럭처 개발 제도 측면에서는, 영국 정부에서 최초로 시행한 민간 자금 조달 방식인 PFI와 PFI의 개정 모델인 PF2로 한정한다.

1.3 방법론

이 연구는 주로 문헌 연구의 방법을 채택하였다. PFI 제도 파악을 위해서 HM Treasury 작성 자료와 NAO의 자료를 주로 활용하였다. 영국의 사례를 벤치마킹한 사례는 한국의 학술 자료를 주로 참고로 하였다.

PPP 관련 조직 운영 현황 파악하기 위해서 각 조직의 조직 소개 자료, 영국 감사원의 보고서, 영국 정부 인터넷 홈페이지의 자료 등을 광범위하게 탐색하였다.

2. 선행연구 검토

본 연구에서는 민관 협력의 개념, 영국 정부 PFI 제도 자체 평가 및 발전 내용, 영국 정부의 인프라 스트럭처 개발 PPP 조직, 대한민국의 공공용지 개발 제도 현황, 한국의 영국 공공용지 개발 제도 벤치마킹 등 5가지 카테고리로 구분하여 문헌을 연구하였다.

3. 영국의 PPP 및 PFI 현황

3.1 Public-Private Partnership이란 무엇인가?

PPP 라는 용어는 영국에서 공공 부문과 민간 부문의 다양한 분야의 협력을 설명하는데 광범위하게 사용된다.

영국은 1990 년대 초부터 PPP 를 도입하여 PPP 의 선구자라고 할 수 있다. 그러나 그 이전에도 영국에서는 인프라 스트럭처에 대한 민간 자금 조달이 이루어졌다. 마가렛 대처 정부가 통신, 가스, 전기, 수도, 폐기물, 공항, 철도를 포함한 공공 인프라 스트럭처를 민영화한 것이다(Njamfa, Beatty, Cundall and Marshall, 2022). 이러한 국가적 인프라 스트럭처의 개발과 운영을 민영화한 경험이, 영국이 PPP 를 세계 최초로 선도하고 다양하게 발전시킨 것에 대한 동력이 되었을 것이라고 추측할 수 있다.

1.1 PFI의 정의

PFI 는 PPP 중의 하나로써 민간의 자본을 활용하는 것으로, 1992 년 영국의 보수당 정부가 최초로 도입하였으며, 1997 년 노동당 정부는 이를 열정적으로 실행하였다. PFI 는 공공 서비스 시설의 설계, 건설 및 운영을 민간 기업에 하도급 계약하는 것을 말한다. PFI 의 가장 큰 특징은 운영의 위험을 공공부문에서 민간부분으로 이전시킨 것이다. PFI 는 민간 계약자 간에 경쟁을 도입하여 민간의 효율성을 극대화 시키는 것이다.

전통적인 공공 조달방법과 PFI 조달 방법의 근본적인 차이점은 누가 자산의 건설을 위한 자금을 조달하느냐와 관련이 있다. 전통적인 조달 방법에서는 민간 부문은 계약에 참여하지만 공공이 재정을 제공한다.

PFI 방법으로 사업이 진행되면 SPV 라는 민간 회사가 설립된다. 이 회사는 부채 및 지분 투자자로부터 자금을 조달하여 건설 비용을 지불한다.

1.2 PFI의 등장

HM Treasury 는 1989 년에 PFI 도입을 가능하게 했다. PFI 는 광범위한 분야에 도입되었다. 700 개 이상의 프로젝트가 완료되었으며, 약 550 억 파운드의 민간 부문 투자를 확보했다. PFI 는 도입 이후 공공 인프라 및 서비스에 대한 정부의 투자 분야에서 작지만 중요한 부분이 되었다(HM Treasury, 2012).

PFI 는 목적물의 완성에 대한 책임을 하도급하고, 공공 프로젝트의 위험을 민간으로 이전시킴으로써, 납세에 대한 부담을 해결하는 좋은 방법으로 생각되었다. 조달 계약에 대한 더 많은 효율성과 더 많은 경쟁이 납세자에게 더 나은 경제적 가치를 제공할 것이라고 기대되었다. 민간 부문은 목적물을 제공하지 않으면 불이익을 당하고 극단적인 경우 프로젝트에 대한 모든 지분 투자를 위태롭게 할 수 있다(Philippa Roe and Alistar Craig, 2004).

1.3 PFI의 문제점

PFI 공공 자금 조달 방식에 비해 더 높은 금융 비용이 발생하는 문제가 있다. HM Treasury 는 공공 부문에서 보험에 가입할 것을 권하지만 PFI 모델에서는 SPV 가 사업 중단 보험에 가입해야 한다.

PFI 의 복잡한 특성은 공공 부문과 민간 참여자 모두가 외부 고문을 사용할 필요성이 더 크다는 것을 의미한다. PFI 구조는 대출기관과 투자자가 행정 및 관리 수수료를 부과하는 계약 변경에 비용이 많이 들 수 있다.

또한 PFI 의 문제점 중 하나는, PFI 의 성과가 정량화되지 않았다는 것이다. HM Treasury 는 PFI 비용이 높다는 것은 경제적 타당성이 프로젝트의 건설 또는 운영에서 비용 절감 달성에 달려 있음을 의미한다고 지적했다. 또는 우수한 프로젝트 제공을 통해 높은 VfM 을

제공하려면 이러한 이점이 더 높은 자금 조달 및 기타 추가 비용을 추가해야 한다고 주장한다. 따라서 PFI의 성과를 정량화 하는 것이 중요하데, HM Treasury는 이를 위한 데이터를 수집하지 않았다(NAO, 2018)

1.4 PF2의 등장

영국 정부는 거의 PPP를 활용하여 인프라 스트럭처를 공급하고 있지만, PFI 방식에 대한 우려와 개혁의 필요성을 인식하고 있었다. 프로젝트의 재무적 성과와 투자자의 수익에 대한 투명성이 부족하고 PFI 프로젝트에서 발생한 미래의 부채의 투명성이 부족하다는 우려였다(HM Treasury, 2012). 이에 따라 HM Treasury는 2011년 12월에 PFI 개혁에 대한 작업에 착수하였다.

PFI의 기본적인 특성은 PF2에서 변경되지 않았다. 민간 부문은 자금을 조달하고 건설하고 유지하며 공공 부문은 25-30년 동안 연간 수수료를 지불하는 구조는 동일하다.

4. 영국 정부 인프라 개발 민관협력 조직

1.5 서론

영국은 인프라 스트럭처 개발을 위해 국가적 단위에서 여러 가지 조직을 설립하고 운영한 경험이 풍부하다. 현재 운영 중인 영국 정부의 민관협력 조직으로는 Planning Inspectorate(PI), Infrastructure and Projects Authority (IPA), National Infrastructure Commission(NIC)가 있다. 또한 National Infrastructure Strategy(Published 2020년 11월)에 따라, 2021년 6월에 UK Infrastructure Bank를 Leeds에 새로 설립하였다. 정부 정책에 따라 운영이 종료되거나 합병된 조직은 Partnership UK(PUK)와 Infrastructure UK(IUK), Major Projects

Authority(MPA)가 있다. 각 조직별 업무 영역과 역할은 서로 겹치는 부분도 있으나, 영국 정부는 상호 보완적인 성격으로 이 조직들을 운영하고 있다. 또한 영국 정부는 인프라 스트럭처를 경제 성장과 새로운 기회 창출의 매개체로 보는 시각도 갖고 있으며, 이를 적절한 시기에 효율적인 비용과 방법으로 공급하기 위해 PPP 관련 조직도 운영하고 있다.

4.1 Planning Inspectorate (PI)

Planning Inspectorate 는 Department for Levelling Up, Housing and Communities 의 산하 기관으로 집행 기관이라고 할 수 있다. 이 연구에서 탐구되는 조직 중에 유일하게 HM Treasury 는 모부서로 삼지 않은 기관이다. 이 조직의 기원은 1909 년 주택, 도시 계획법과 영국 계획 시스템의 탄생으로 그 뿌리를 거슬러 올라간다.

4.2 Partnerships UK (PUK)

Partnerships UK 는 PFI 정책 실행을 위한 최초의 PPP 조직이다. 1997 년 7 월 Treasury Taskforce 라고 알려져있는 PFI TF 가 HM Treasury 내부에 설립되었다. 이 기관의 주된 업무는 조달 업무를 표준화하고 PFI 실행을 위한 것이었다. 특히 민간 재원에 대해 PFI 방식으로 다른 정부 부처의 직원들을 훈련시키는 것이었다. TTF 의 프로젝트 부문은 부분적으로 민간화되었고, 2000 년에 ‘Partnerships UK’가 되었다. PUK 는 거의 기업의 변호사, 투자 은행가, 컨설턴트와 같은 민간부문 조달 전문가로 구성되었다. 2010 년 6 월에 Infrastructure UK(IUK)가 HM Treasury 내에 별도의 단위로 설립되었다. 그 결과 2011 년 5 월에 PUK 는 해산되었다(PUK, 2023).

4.3 Infrastructure UK (IUK)

Infrastructure UK(IUK)는 HM Treasury 산하 조직이었다. 영국 정부에 장기적인 인프라스트럭처 수요에 대해 조언하고 2010 년에서 2016 년 사이에 주요 프로젝트 및 프로그램을 지원하기 위한 상업적 전문 지식을 제공했다(IPA, 2023).

4.4 Major Projects Authority (MPA)

2011 년 1 월에 설립되어 2016 년 1 월에 IUK 와 합병하여 IPA 가 되었다. MPA 는 정부의 주요 인프라스트럭처를 감독하고 품질을 보증할 목적으로 설립되었다.

4.5 Infrastructure and Projects Authority (IPA)

Infrastructure and Projects Authority (IPA)는 현재 운영 중인 조직이다. IPA 는 2016 년 1 월 1 일 Infrastructure UK(IUK)와 Major Projects Authority(MPA)의 합병으로 설립되었다. IPA 의 설립 목적은 영국 정부가 인프라스트럭처와 주요 프로젝트를 제공하는 방식을 지속적으로 개선하는 것이다. IPA 는 영국 정부가 프로젝트를 더 잘 제공하고 전문적인 프로젝트 제공 기술을 공무원에게 제공하도록 지원한다.

IPA 는 다양한 전문가들은 프로젝트를 지원하고 프로젝트를 성공적으로 시작하고 수행하기 위해 정부 및 민간 업계와 협력한다. 조언의 질과 성격에 대한 책임은 전문 분야에 따라 수평적이다. 자원의 우선 순위는 인프라, 기업 및 성장, 공공 및 보안 서비스의 부서장과 각 부국장을 통해 수직적으로 추진된다.

4.6 National Infrastructure Commission(NIC)

National Infrastructure Commission 는 2017 년 1 월에 HM Treasury 의 집행 기관으로 설립되었다. NIC 는 정부가 설정한 특정

연구에 대한 위임 및 위임 조건에 따라 업무를 수행한다. 하지만, NIC 는 프로젝트의 내용에 대해 독립적으로 결정할 수 있는 완전한 권한을 갖고 있다. NIC 의 설립 목적은 영국의 모든 지역에서 지속가능한 경제 성장을 지원하고 삶의 질을 향상 시킨다는 데 있다.

NIC 는 해당 부처와 긴밀하게 협력하다. 특히 영국 정부와 위임된 부처가 상호 협력하는 문제에 대해 개입할 수도 있다.

NIC 는 국가적 인프라 스트럭처에 대해 평가할 책임이 있다. 이 위원회는 정부가 설정해놓은 소관 업무 범위 내에서 정부에게 조언을 제공한다. 또한 NIC 가 수행하는 분석 및 권고사항의 퀄리티와 공적 자금 사용 방식에 대해 책임을 진다.

정책 결정은 정부의 책임이며 장관은 인프라 스트럭처 정책과 제공에 대해 결정을 할 책임이 있다. 재무장관은 NIC 의 권고를 승인할 지 여부를 결정하고 정책이 채택되는 방법을 결정하는 데 전적인 책임을 가진다.

4.7 UK Infrastructure Bank (UKIB)

UKIB 는 HM Treasury 에서 설립하고 독자적으로 운영되는 가장 최근에 설립된 PPP 기관이다. UKIB 는 국가 인프라 사업에 대한 투자 기능을 가진다. UKIB 는 민간 부문 및 지방 정부와 협력하여 국가 인프라스트럭처에 대한 투자를 가속화하는 공동의 임무를 갖는다. 엔지니어링 기술과 건축가 및 디자이너의 혁신을 활용하여 프로젝트를 현실로 제공한다.

5. 한국의 현황 및 문제점

5.1 한국의 공공용지 개발 계획

한국의 공공용지 개발은 1994 년 신탁개발이 도입된 이후 2005 년 위탁개발, 2011 년 기금개발, PPP 개발이 순서대로 도입되었다.

‘기금개발’은 국유재산관리기금을 재원으로 공공 청사 등을 건설하기 위한 기금 개발에서 기획재정부가 개발사업을 총괄한다.

‘신탁개발’은 일반재산 대상으로 부동산 신탁을 취급하는 신탁업자에게 신탁하여 국유재산의 개발을 위임하는 방법이다. 국유지는 매각하지 않고 신탁업자에게 국유지를 신탁하고 개발한 후 수익을 배당한다.

‘위탁개발’은 지정된 수탁자가 국유재산법에 따라 개발하는 것으로 다른 방식과는 달리 위탁개발에는 건물 개발 뿐만 아니라 토지 개발 또한 허용된다. 수탁자는 사업계획서를 작성 후 총괄청이 사업의 적정성을 검토하여 국유재산정책심의위원회의 심의를 받은 후 사업 승인을 받아 사업을 진행한다.

‘민간참여 개발’은 SPV 를 총괄청과 민간사업자가 공동으로 설립하고나 자산관리회사에 총괄청이 출자하여 민간사업자와 공동으로 일반재산을 개발한다. 총괄청은 민간참여 개발 사업에 대한 기본계획을 수립하고 민간사업자를 공개적으로 모집하여 협상에 따라 계약한다. 개발로 인한 수익은 SPV 설립 시 투자한 지분에 따라 배분한다. 개발사업의 리스크는 SPV 가 부담한다.

5.2 개발과정에서 문제점

한국의 경우, 국유지 개발 사업 과정에서 발생하는 다양한 문제점들로 사업이 지연되거나 무산되는 등 문제가 발생하여 제도 개선을 하기 위해 노력 중이다. 대한민국의 국유지 개발 사업은 개발 방식의 경직성, 사업승인 절차의 복잡함, 전문성 축적 여부 등에서 문제점이 있다. 이 연구에서는 한국의 공공용지 개발의 문제점을 다음과 같이 제도적인 측면의 문제점과 조직 운영 측면의 문제점 두가지 로 도출하였다.

제도적 측면의 문제점

- 종합적이고 장기적인 국가 인프라 스트럭처 계획이 존재하지 않음
- 현재 한국의 주된 공공 용지 개발에 적용할 수 있는 사업 방식이 제한적임
- 프로젝트에 대한 사후 평가 시스템이 활성화되지 않아, 향후 프로젝트에 피드백 반영이 어려움

인프라스트럭처 개발 전문 조직의 부재로 인한 문제점

- 프로젝트가 부처별로 파편적으로 진행되며, 사업 담당 공무원의 개발 사업에 대한 전문성이 부족함
- 이해관계 충돌 시 강력한 조정 기능을 가진 총괄 기관이 존재하지 않음
- 사업비 산정이 단계적으로 일관되지 않으며, 명확한 기준이 없음

6. 결론

6.1 한국의 공공용지 개발 실현성 강화를 위한 방안

Planning Inspectorate 부터 UKIB 까지, 영국 정부는 PPP 제도의 중요성을 인지하고 있다. 정부의 독자적 입장을 고수하기보다는 민간의 의견을 수용하고 협력한다. 시간이 지나도 이러한 정책을 일관되게 추진하고 있다는 점은 우리나라 공유지 개발에 있어서 중요한 시사점을 준다고 할 수 있다. 또한, PFI 제도를 시행함에 있어서 잉여 민간자금을 공공부문으로 유치하고, 공공재정을 보완하며, 인프라를 적시에 공급할 수 있는 기반을 조성하는 것에도 의의가 있다고 할 수 있다.

6.2 계획 측면에서의 강화

첫째, 국가 전체를 포괄하는 종합적이고 장기적인 국가 인프라 계획이 있어야 한다. 인프라가 필요한 분야의 선정, 금융투자 우선순위, 최적의 사업 방식 등이 이 계획에 포함될 수 있다.

둘째, PPP 확대를 위해 제도를 개편해야 한다. 현재 공유지 건축물의 개발은 주로 공기업이 참여하는 자금개발과 위탁개발의 두 가지 방식으로 이루어지고 있다. 그러나 PPP 개발 방식을 도시 내 건축물 개발까지 확대할 필요가 있다. 왜냐하면 서양과 달리 한국의 도시는 인프라 집약적인 시기에 매우 빠르게 발전했고, 인프라가 집중적으로 공급되면서 거의 동시에 시설 노후화가 찾아오는 문제가 있기 때문이다.

셋째, 기반시설사업 사후평가체계 구축이다. 개발 프로젝트에는 다양한 분야에 대한 장기적인 전문성이 필요하다. 개발사업은 25년 이상 장기사업이기 때문에 탄탄한 사후평가 시스템이 필요한 프로젝트이다.

6.3 개발 전문성과 조정 권한을 가진 조직 설립

개발사업은 사업기간이 장기적이고 전문지식과 기술이 집약적으로 요구되는 분야이다. 새로운 전담 조직은 각 분야의 전문가들이 장기적이고 안정적으로 프로젝트를 추진할 수 있는 환경을 조성해야 한다. 영국의 IPA 처럼 전문가와 함께 매트릭스 방식으로 개발 프로젝트를 지원하는 실행조직이 필요하다. 또한 이 조직의 역할은 이해 상충으로 인해 인프라 개발이 지연되는 것을 방지하는 것이다. 중앙정부, 지방자치단체, 공공기관, 지역사회 간의 의견충돌을 조정할 수 있는 독자적인 권한을 가진 기구가 필요하다. Planning Inspectorate 을 제외하고 본 연구에서 검토된 모든 PPP 조직은 HM Treasury 에 의해 설립되었다. 인프라 개발이 국가에 경제적으로 중요하기 때문일 것이다. 다행히도 우리나라에서는 최근 국가 인프라 정책의 선진화 필요성이 대두되고 있다(Kim, 2023). 국유지의 총괄 관리기관인 기획재정부도

지방자치단체의 꾸준한 요구에 부응해 공공토지를 지자체와 함께 활용하는 방안을 마련 중이다(기획재정부, 2023).

〈붙임 2. 영문 원본〉

**Research on UK government PPP
organization and PFI system to
strengthen the feasibility of public
land development in Korea**

Abstract

Many countries around the world have already adopted and utilized the PPP development method, because PPP public land development has the advantage of providing public services in a timely manner while reducing the burden on public finances. As large cities such as Seoul and Busan in Korea have abundant development potential and demand for high-quality public services continues to increase, PPP infrastructure development has been steadily emerging.

When managing public land, the UK recognized it as a resource that could be utilized rather than maintained or preserved. Based on the experience of privatizing national infrastructure since the 1970s, the government has invested in and operated various PPP organizations, from the Planning Inspectorate to the UK Infrastructure Bank, and created a private financial borrowing system called PFI. Based on the experience of operating PFI since 1992, PF2, an improvement method of PFI, was implemented 10 years later in 2012.

This study broadly explored the UK's infrastructure development PPP organization and PFI system with the purpose of deriving implications for strengthening Korea's public land development capabilities. From the Planning Inspectorate to the UK Infrastructure Bank, the UK government recognizes the importance of PPPs, accepts opinions from the private sector without adhering to the government's independent position, and is pursuing consistent policies, which has great implications for public land development in Korea. In addition, in implementing the PFI system, it can be said that it is also meaningful to create a basis for attracting surplus private funds into the public sector, supplementing public finances, and supplying infrastructure at an appropriate time.

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Introduction

Research Background and Purpose

PPP development refers to a real estate development and operation project in which the private and public sectors combine their capabilities to achieve a common goal in one project site. In PPP projects, the private sector refers to investors, developers, and operators participating in development projects. The public sector refers to the central government, local governments, local government-funded institutions, and public enterprises. When the PPP method of development is selected, the project site is mostly public land.

Let's take a look at the potential for public land infrastructure development in Korea. Taking Seoul, the capital of South Korea, as an example, the currently available public space is 6,840,000 square meters, which is 92 times the area of the most recently developed Battersea Power Station (74,000 square meters) in southwest London, which is by no means small. However, compared to the increasing demand for public services, the use of public land in Korea is not active. Reasons for limitations in the use of public land include low potential or high land prices, lack of public finance, and lack of expertise in public business planning, development, and operation.

Since PPP public land development has the advantage of providing public services on time manner while reducing public finance input, the need for activation has been steadily emerging. Because private capital is used, limited public finances can be used efficiently, and public service facilities of an appropriate level can be provided at the right time.

Although not all public lands are like this, large cities such as Seoul and Busan have abundant development potential and demand for public services is continuously increasing. Research that can dramatically activate PPP projects is timely. can be considered appropriate.

The UK has extensive experience in managing public lands as a resource that can be utilized rather than maintained or preserved and implemented at the government level. Since the 1980s, the policy tone for common property has been 'development and utilization'. PPP development methods have also been developed in various ways. Accordingly, methods such as raising funds from the private sector without public financial support, establishing a public-private relationship when promoting a PPP project, and bearing risks for each project participant can be said to have a very high research value at this point. Important implications can be found for future public land development methods and PPP-related organizational operations.

In Korea, there are no ministries or committees in charge of national infrastructure projects, and planning, management, and coordination are carried out individually by offices and countries within related ministries, or projects are implemented in fragments through individual committees. As a result of evaluating the level of infrastructure governance among OECD countries, Korea ranks 17th out of 31 member countries, which is below the middle, and the need for upgrading infrastructure governance is growing (Jung, 2023).

However, the Ministry of Economy and Finance of the Republic of Korea is promoting governance establishment so that local governments can utilize state-owned land as a Living type SOC(MEF, 2023). An atmosphere in the central government and local governments must establish cooperative governance in

utilizing public land has finally been created, and the central government is promoting this. In addition, there is a national research institute's argument that the UK's case should be benchmarked concerning the establishment of an advanced infrastructure governance mode. Meanwhile, at the local government level, the Seoul Metropolitan Government is promoting the establishment of a new organization dedicated to the management and development of the city's public assets¹.

The UK systematically operates a separate organization to manage public land and fully utilizes the strengths of the private sector. Although the role is expanded or reduced according to social conditions, a dedicated organization consistently supports all PPP projects of the UK government doing.

The purpose of this research is to examine the current status of PPP-related organizations operated by the UK government and to draw implications that can strengthen implementation capabilities in the future public land development process in Korea.

Research Scope

The UK's national infrastructure development is mainly carried out through the PPP methods. This study largely explores the UK's PPP-related scheme and PPP organizations. In terms of organizations, currently existing organizations include the Planning Inspectorate, established in 1977 and still operating today, the Infrastructure Projects Authority, established in 2016, the National Infrastructure

¹ The Mayor of Seoul is preparing to establish a public corporation to professionally develop and operate public lands in Seoul, and to this end, a public asset officer was established in the Planning and Coordination Office in July 2022.

Commission, established in 2017, and UKIB, established in June 2020. We will look at four organizations. Three organizations have already ceased operation or been merged; PUK, IUK, and MPA. In terms of the infrastructure development system, it is limited to PFI, the private financing method first implemented by the UK government, and PF2, a revised model of PFI.

Methodology

This study mainly adopted the method of literature research.

To identify the PFI system, HM Treasury data and NAO data were mainly used. The case of benchmarking the case of the UK is rich in Korean data, so Korean academic data were mainly referred to.

To understand the operational status of PPP-related organizations, the organization introduction materials of each organization, the report of the National Audit Office, and the data of the UK government's Internet homepage were extensively searched.

Literature Review

In this study, we divided into five categories: the concept of public-private partnership, self-evaluation and development of the UK government PFI system, the UK government's infrastructure development PPP organization, the current status of Korea's public land development system, and the benchmarking of Korea's UK public land development system. The literature was studied.

Definition of PPP

PPP refers to the cooperative provision of public services by the public sector and the private sector. Currently, the term PPP is used in all areas under the administrative power of the central and local governments, such as national infrastructure development, social welfare, urban development, and urban regeneration.

Cartlidge argued that it is true that PPPs are already a very important part of the UK construction industry, and many governments around the world are adopting PPPs to better provide public services to their citizens(Cartlidge, 2006).

UK government PFI scheme development and evaluation

Roe and Craig reviewed the PFI from when it was first implemented to the present and argued that PFI needs to be reformed. Roe and Craig proposed reforms, arguing that the abolition of the PSC (Public Sector Comparator), the pursuit of greater transparency in debt management, and the strengthening of public

professionalism in the process of contract negotiations should be reformed(Roe and Craig, 2004).

In 2012, HM Treasury reviewed public-private partnerships in the provision of public services over the past 20 years, noting that not all PPPs were successful and pointing out PFI's waste, rigidity, and lack of transparency. HM Treasury conducted a fundamental re-evaluation of PFI in 2011 and also collected opinions from experts and stakeholders, and implemented a new PFI improvement method, PF2. The basis of PF2 's funding structure and contract is the same as that of PFI, however there have been improvements in terms of transparency(HM Treasury, 2012).

The National Audit Office has prepared reports on PFI for two consecutive years in 2017 and 2018, and this report, written after the implementation of PF2 in 2012, is one of them. PFI was reviewed and PFI and PF2 were compared(NAO, 2018).

UK government infrastructure development public-private partnership organization

The cases of academic analysis conducted on public-private partnership organizations for infrastructure development in the UK government are not sufficient to be reviewed in this study. The UK government's public-private partnership organizations for infrastructure development currently in operation are Planning Inspectorate, IPA, NIC and UKIB, and three organizations that have closed or merged are PUK, IUK and MPA. In this study, to analyze the infrastructure development PPP organization, the UK government The unique tasks and characteristics of each organization were analyzed by referring to the organization's

Internet homepage, annual performance report, and organization introduction materials.

Current Status and Problems of Korea's Infrastructure Development System

Sim Ji-soo and others identified the problems of Korea's state-owned land development project, drew implications from the UK's development case, and suggested major institutional improvement measures to vitalize state-owned land development. It was argued that the effect of state-owned land development could be maximized by introducing a joint consignment system of institutions with specialized state-owned land development institutions (Shim Ji-soo, Lee Seung-wook and Kim Seung-jong, 2022).

Kim Myeong-soo diagnosed problems with the fact that the use of state land is regionally biased, that it is used mainly for buildings, and the implementation of specific business methods, etc. suggested (Kim Myung-soo, 2018).

Korea's Benchmarking UK Policy

Since 2005, the Korean government has implemented the BTL project in earnest as a means of public reform. In preparation for this, the UK PFI was intensively studied.

Ham and Kim studied the performance of the PFI projects. It was analyzed that the positive evaluation of the timely completion of the PFI project and the increase or decrease in project cost would be a positive case for the efficiency problem of Korea's private investment project. In addition, it was suggested that the UK

government's efforts to enact refinancing-related regulations and improve the SPV (Special Purpose Vehicle) system are also an incentive for private investment (Ham and Kim, 2004).

Kim Ki-Su of KDI researched to prepare a standard for signing a BTL business-type private investment project implementation agreement. It can be said that it contributed to the revitalization of the BTL business by investigating the standard agreements, guidelines, and implementation agreement cases of PFI projects in the UK and Japan and proposing a standard plan for concluding a BTL-type private investment project implementation agreement (Kim, 2005).

Jae-hong Joo argued that, three years after implementing the BTL business method, it can be said that Korea's BTL business has now become established, however it is too early to judge it as successful as there have been no cases in which it has entered full-scale operation and received positive evaluations from users.

Jaehong Joo identified the success factors and trials and errors at each stage of the PFI project process and provided implications for future BTL projects in South Korea (Joo, 2007).

The current status of PPP and PFI in the UK

What is a Public-Private Partnership (PPP)?

The term PPP is used extensively in the UK to describe collaboration between the public and private sectors in various sectors. PPP applies to a wide range of fields such as Energy and Power, Telecom and ICT, Transportation, Water and Sanitation, and urban development. The post-2008 financial crisis has rekindled interest in PPPs in both developed and developing countries. Facing the limits of public finances, recognizing the importance of investing in infrastructure to boost the economy, they increasingly turned to the private sector as an alternative to public finance injections(The World Bank, 2003).

There are three options for governments to provide infrastructure services. The first is directly provided by the public. The second is to execute the design, construction, operation, etc. by contract. The third is the Public-Private Partnership(Vining and Boardman, 2008). PPPs combine the public and private sectors into long-term contracts. Zitron defined PPP as 'a long-term relationship between the public and private sectors to produce public services or infrastructure'(Zitron, 2006). Cartledge defined public sector or service purchasers as institutions such as National Health Service hospital trusts, local government authorities, and central government departments, while private sector or service providers form special purpose companies to achieve the objectives of PPPs and PPPs It was defined as a profit-generating organization that includes various experts in finance, construction, design, and facility management according to its characteristics.

Since its introduction in 1992, PPP has provided a lot of controversy for about 10 years. The concept of PPP, in which the private sector is granted the authority by the public sector to provide public services for profit, has been met with opposition from many. No topic in the history of public sector procurement has been so controversial like this (Cartlidge, 2006).

According to The World Bank, the potential benefits and risks of the PPP include following;

Potential Benefits

- Innovative measures to provide better public services by introducing excellent private technology and improving efficiency
- Enables the private sector to complete projects on time and within budget • Calculate the current and future costs of infrastructure projects over time to ensure budget predictability
- Opportunities for subcontracting from local companies in fields such as civil engineering, electrical work, facility management, security services, cleaning services, and maintenance services.

Offer

- Use of PPPs as a way for public enterprises and governments to continue to increase the level of private sector participation and to structure PPPs. Operate with expertise and ensure technology transfer
- Strengthening the country's competitiveness in terms of a good infrastructure base and revitalizing the economy by giving a boost

to industries related to infrastructure development (construction, equipment, support services, etc.)

- Complement public sector capacity to meet infrastructure development needs
- Create long-term, highly efficient value by transferring appropriate risks to the private sector from design and construction to operation.

Potential Risks

- The cost of developing, bidding, and proceeding PPP projects is likely to be higher than traditional government procurement processes. The government must therefore decide whether the larger costs involved are justified. Numerous PPP and implementation units around the world have developed ways to analyze these costs and investigate their cost-to-value.
- Debt comes with costs. Although funding is easier in the private sector, financing is expected to be provided by the project company's operating cash flow to provide return on investment
- Some projects may be easier to finance than others, while others only generate revenue in local currency, while others offer currencies in dollars or other international currencies, which may have less impact on local financial market constraints.
- Some projects may be more politically and socially difficult to introduce and implement than others. Particularly if existing public sector personnel are afraid of being transferred to the private

sector, significant tariff increases are required to implement the project, serious land or resettlement issues, etc

- There is no unlimited risk. Private companies will be cautious about taking major risks that cannot be controlled, such as exchange rate risk/risk of existing assets. If they take this risk, they will reflect it in the price of the service. Private companies will also want to know that the government must respect the rules of the game in relation to promises such as stricter tariff regulations. The private sector also expects a significant level of control over its operations to take significant risks.
- The Government's responsibility continues. Citizens will continue to hold the government accountable for the quality of utility services. Governments must also have sufficient expertise to understand PPP commitments, fulfill their own obligations under PPP commitments, and monitor and enforce private sector performance through enforcement agencies and/or regulators. one's duty
- The private sector is likely to have more expertise, and in a short time, it will benefit from the data associated with the project. To reduce this potential imbalance, it is important to impose clear and detailed reporting requirements on private operators.
- Some of these issues can be addressed in PPP contracts, but some are likely to have to be managed in the course of the project (World Bank, 2023).

The UK can be said to be a pioneer of PPP by introducing PPP in the early 1990s, however even before that, private financing for infrastructure was carried out in the UK. The government of Margaret Thatcher privatized public infrastructure including telecommunications, gas, electricity, water, waste, airports, and railways (Njamfa et al., 2022). It can be assumed that this experience of privatizing the development and operation of national infrastructure may have been the driving force behind the UK's leading and diversifying PPP in the world.

UK's PPP proportion accounts for 1.7 percentage of UK's GDP. It is the third highest in Europe and the highest in the European economy among the G7 countries (NAO, 2018).

Definition of PFI construction and operation

PFI is one of the PPPs that utilizes private capital. It was first introduced by the Conservative government in UK in 1992, and the Labor government in 1997 enthusiastically implemented it. PFI is the subcontracting of the design, construction, and operation of public service facilities to private companies. The most distinctive feature of PFI is the transfer of operational risks from the public sector to the private sector. PFI aims to maximize private efficiency by introducing competition among private contractors. Roe and Craig argued that PFIs should be distinguished from PPPs, saying that they are supported by the government and do not transfer risks to the private sector, that there are concerns about transparency, that monitoring is difficult, and that the scope of responsibility is ambiguous.

PFI has been most successfully introduced into the construction and operation of roads and prisons. It has also been successfully introduced into the construction and maintenance of mainly schools and hospitals. From 1997 to 2003, more than 450 new utilities were introduced using PFI. It includes 34 hospitals, 239 schools and 23 transportation facilities.

88% of all PFI projects were completed on time or early, with no public sector cost overruns. Conversely, 70% of conventional publicly funded projects are late and 73% are completed over budget(Roe and Craig, 2004).

A fundamental difference between traditional public procurement methods and PFI procurement methods relates to who finances the construction of the asset. In traditional procurement methods, the private sector participates in the contract, however the public provides finance.

When a business is conducted under the PFI method, a private company called SPV is established. The company raises money from debt and equity investors to pay for construction. Once the asset is built and put into service, the public sector pays a Unitary Charge over a contract period, usually 25 to 30 years. This charge includes debt and interest payments, shareholder dividends, asset maintenance and, in some cases, other services such as cleaning. These payments are agreed upon at the start of the contract and some or all of them are inflation-linked.

PFI was introduced in 1992, the UK government has used PFI and PF2 to build a large number of new assets such as hospitals and schools. As of January 2018, there were 716 PFI and PF2 projects under construction or operating, with a total capital value of £ 59.4 billion(NAO, 2018).

PFI appearance

HM Treasury made the introduction of PFI possible in 1989 when it announced that it would repeal the Ryrie-Rules² and allow additional private financial investment in roads. In general, HM Treasury discourages public institutions from borrowing from the private sector, as the government can raise funds at a lower cost than private sources. However, PFI is an exception because it has the potential to provide efficiency improvements. With the adoption of the PFI method, it was felt that shifting the risk to the private sector could bring greater benefits than higher financing costs. PFI engages the private sector in the design, construction, financing, and operation of public infrastructure to provide quality, well-managed assets that provide value for money to taxpayers. PFI has been introduced into a wide range of sector. More than 700 projects have been completed and private sector investment of around £55 billion has been secured. Since their introduction, PFIs have become a small but important part of government investment in public infrastructure and services (HM Treasury, 2012).

The reason why former Chancellor of the Exchequer Norman Lamont of the Conservative government introduced PFI in 1992 is simple. This was because taxpayers disliked traditional procurement methods, whether from central or local governments. It was also attributed to the public sector's inability to deliver projects on time and within budget due to a lack of professionalism among civil servants, poor project management skills, and lack of incentives.

² Ryrie-Rules: Before 1989, the UK government did not allow private capital to be raised for public sector projects. It was assumed that some projects, such as road construction, would have to be carried out by the public sector and, where private sector funding was involved, public spending would be required. The Ryrie Rules were formulated in 1981 by the National Economic Development Council, chaired by Sir William Ryrie, then Assistant Secretary of the Treasury. This rule sought to set the criteria by which private finance could be introduced into nationalized industries (Cartlidge, 2006).

The PFI was seen as a reasonable way to address the tax burden by subcontracting responsibility for the completion of a project and shifting the risk of a public project to the private sector. Shifting project risks to the private sector will motivate the private sector to provide services to the public sector and can be more efficiently managed. It was expected that more efficiency and more competition for procurement contracts would deliver better economic value to taxpayers. The private sector is penalized for not delivering the target and in extreme cases can jeopardize all equity investments in the project(Roe and Craig, 2004).

PFI problem

There is a problem of higher financing costs compared to the PFI public financing method. HM Treasury recommends that the public sector take out insurance, however the PFI model requires the SPV to take out business interruption insurance. Additionally, the SPV must have surplus cash to meet lenders' requirements. HM Treasury generally does not recommend holding excess cash. The complex nature of PFI means there is a greater need for both public sector and private players to use external advisors. Loan fees are typically 1% of the loan amount, however can increase up to 2%. In other words, PFI structures can be costly to change contracts, with lenders and investors charging administrative and management fees.

Additionally, one of the problems with PFI is that its performance is not quantified. HM Treasury noted that high PFI costs mean that the economic viability depends on achieving cost savings in the construction or operation of the project. Alternatively, they argue that delivering high VfM through quality project delivery requires that

these benefits come at the expense of higher financing and other additional costs. Therefore, it is important to quantify the performance of PFI, however HM Treasury did not collect data for this (NAO, 2018).

PF2 appears

The UK government almost always uses PPPs to supply infrastructure, it has recognized concerns about the PFI method and the need for reform. There was widespread concern that public institutions were not reaping financial benefits and that taxpayers were not getting a fair deal, both now and in the long run. There were concerns about the lack of transparency about the project's financial performance and investors' returns, as well as the lack of transparency about the future liabilities arising from the PFI project (HM Treasury, 2012). Accordingly, HM Treasury started work on PFI reform in December 2011. What HM Treasury revealed about the reasons for PFI reform is as follows. First, the aftermath of the 2008 financial crisis reduced the long-term availability of private finance in banks and even using private finance is costly, making justifying the PFI's value for money (VfM) case more difficult. Second, the PFI has been criticized in the media and Congress, including the Public Accounts Committee and the Finance Committee. Third, in the 2010 Government Spending Review, the Coalition Government canceled some of the proposed PFI projects. Investor interest in PFI continued, however a lack of newly launched projects created uncertainty in the market between 2010 and 2011. A revision of the PFI model was seen as a way to address this market uncertainty (NAO, 2018).

The basic characteristics of PFI have not changed in PF2. The structure is the same: the private sector finances, builds, and maintains, and the public sector pays annual fees for 25-30 years. The major changes are as follows, and are summarized in Table 1.

- The public sector must also have equity. The public sector has a minority stake, typically 10%, in all transactions. This can improve transparency as the public sector participates in the board of directors. Additionally, by owning a stake, the government can share the risks and profits of the project.
- Equity returns must be disclosed. In some PFI projects, equity investors were able to receive high returns on their investments. This may mean that the project has higher returns than originally anticipated. However, the NAO was concerned that the high stock yields could lead to inefficiencies in the contract's initial costing. However, instead of attempting to limit or regulate stock returns, HM Treasury has chosen to increase transparency about returns and introduce equity financing competition. Namely, PF2 allows private sector providers to post actual and forecast stock returns.
- The risk of legislative changes, energy costs, and site contamination are borne by the public sector (NAO, 2018).

	PFI	Original PF2	Current PF2
No or limited change			
Finance structure	90% debt, 10% equity	75% debt, 25% equity	90% debt, 10% equity
Contract length	25 to 30 years	25 to 30 years	25 to 30 years
Balance sheet treatment (National Accounts)	Off-balance sheet	Off-balance sheet	Off-balance sheet
Budgetary treatment of PFI capital investment	Upfront capital costs not included in departmental budgets	Upfront capital costs not included in departmental budgets	Upfront capital costs not included in departmental budgets
Restrictions on equity returns or sales	No	No	No
Soft services (such as cleaning and catering)	Included in early PFI deals but not in recent deals	Usually exclude (but option to include)	Usually exclude (but option to include)
Key changes			
Public sector equity	Not required	Required	Required
Publication of equity returns	No	Yes	Yes
Equity funding competitions	No	Encouraged/optional	Encouraged/optional
Public sector keeps risk of: Change in law, utilities costs, site contamination	No	Yes	Yes
Limited tendering phase	No	18 months maximum	18 months maximum
Changes introduced/reversed to ensure PF2 remains an off-balance sheet vehicle			
Lifecycle fund gain-share	No	Yes	No
Refinancing gain-share	at least 50%	at least 50%	No more than 30%

Table 1 Comparison PFI, PF2 as per the HM Treasury launch document and PF2 in its current (NAO, 2018)

Organizations involved in developing national infrastructure in the UK

Introduction

The UK has extensive experience in establishing and operating several organizations at the national level for infrastructure development. Public-private partnership organizations currently operating in the UK include the Planning Inspectorate(PI), the Infrastructure and Projects Authority(IPA), and the National Infrastructure Commission(NIC). In addition, in accordance with the National Infrastructure Strategy(Published November 2020), a new UK Infrastructure Bank was established in Leeds in June 2021. Partnership UK(PUK), Infrastructure UK(IUK), and Major Projects Authority MPA) are organizations whose operations have been terminated or merged according to government policy. Although the work areas and roles of each organization overlap with each other, the UK government operates these organizations in a complementary manner. The UK government also has a view of infrastructure as a medium for economic growth and the creation of new opportunities and is also operating a PPP-related organization to supply it in a timely and cost-effective manner.

In the next chapter, we will explore in detail the purpose of the establishment and business areas of each organization and the history of the establishment and abolition of PPP organizations is summarized in Figure 2.

Year	Name of Institution	Details
1989	Announcement of scrapping of HM Treasury Ryrie-Rules	Repeal the Ryrie-Rules and allow private financial investment in roads.
1992	HM Treasury	The first use of the name Private Finance Initiative; PFI expands to sectors other than roads
1992	Planning Inspectorate established	Make decisions and provide recommendations and advice on a wide range of land use planning issues
1997	Established Treasury Task Force	TaskForce for standardization of PFI implementation and procurement work
2000	Establishment of Partnership UK	49% owned by HM Treasury, Policy Execution Control Tower
2010	Established Infrastructure UK	Established inside HM Treasury
2011	Partnership UK dissolved	PUK's assets, services, data and personee were transferred to IUK
2011	Major Project Authority	Part art of the Cabinet Office's Efficiency and Reform Group (ERG)
2012	PF2 introduction	Prepare improvement plans for concerns and criticisms about PFI
2016	Establishment of IPA	IUK and Major Project Authority Reports to the Cabinet Office and HM Treasury, receives financial support from HM Treasury, but operates independently
2017	NIC established	Established by HM Treasury, but operated independently
2021	Established UKIB	Established by HM Treasury, but operated independently

Table 2 PFI and infrastructure public-private partnership organization history (By Author, 2023)

Planning Inspectorate

Planning Inspectorate It is a subsidiary of the Department for Leveling Up, Housing and Communities and can be said to be an executive agency. Of the organizations explored in this study, HM Treasury is the only one that does not have a parent department.

Anyone planning Nationally Important Infrastructure Projects (NSIP) must first apply for consent. For such projects, the planning task force reviews the application and makes a recommendation to the relevant Secretary of State, who will decide whether to grant or deny the development agreement.

The Planning Examiner handles planning appeals, national infrastructure planning applications, regional planning inspections and other planning-related and specialized casework in the UK.

The Planning Inspectorate is the executive body of the UK Government's Department for Housing and Communities and is responsible for making decisions and providing recommendations and advice on a wide range related to land use planning. The Planning Examiner handles planning appeals, nationally significant infrastructure projects, planning permits, regional planning, and other planning-related and specialized case investigations.

The origins of the Planning Inspectorate can be traced back to the 1909 Housing, Town Planning Act and the birth of the UK Planning System. John Burns (1858–1943), the first working-class man to become a government minister, was chairman of the provincial government council and enacted the Housing Act of 1909. He appointed Thomas Adams (1871–1940) as city planning assistant. This is a

precursor to his current role as Chief Planning Investigator. Between 1977 and 2001, Censorship was based at Tollgate House, Bristol, then moved to its current headquarters at Temple Quay House, Bristol. (Planning Inspectorate, 2023)

Partnerships UK (PUK)

Partnerships UK was the first PPP organization to implement the PFI policy.

The PFI TaskForce, known as the Treasury Taskforce was established within HM Treasury in 1997. The main task of this organization was to standardize procurement practices and implement PFI. In particular, it was to train staff from other government departments in a PFI manner on private sources. The TTF initially consisted of a policy department comprising five civil servants and a project unit employing eight private sector executives from the investment bank Dresdner Kleinwort. In 1999, the policy arm of the TTF was transferred to the Office of Government Commerce(OGC), however later to the Ministry of Finance.

HM Treasury owned a 49% stake in PUK, which was managed by shareholder management. The majority of the company's shares were owned by the private sector.

The PUK is comprised almost entirely of private sector procurement professionals such as corporate lawyers, investment bankers, and consultants. PUK played a leading role in promoting the development of PFI and other public-private partnerships within the government and controlled the implementation of the policy.

In June 2010, Infrastructure UK (IUK) was established as a separate unit within HM Treasury to collaborate with the private sector on major infrastructure construction projects. As a result, PUK was disbanded in May 2011. Some of PUK's assets, services, data, and staff were transferred to IUK along with other assets during 2011(PUK, 2023).

Infrastructure UK (IUK)

Infrastructure UK (IUK), a division of HM Treasury, advised the UK government on the UK's long-term infrastructure needs and provided commercial expertise to support key projects and programs between 2010 and 2016.

On January 1, 2016, it merged with the Major Projects Authority to become IPA. IUK has an Advisory Committee that meets quarterly. non-executive chairman In addition, a committee was formed including representatives from the private sector (IPA, 2023).

Major Projects Authority (MPA)

It was founded in January 2011 and merged with IUK in January 2016 to become IPA. The MPA was established with the purpose of overseeing and quality assurance the government's critical infrastructure(MPA, 2023).

Infrastructure and Projects Authority (IPA)

Infrastructure and Projects Authority (IPA) This is an organization currently in operation. IPA was established on January 1, 2016 through the merger of Infrastructure UK (IUK) and Major Projects Authority (MPA) . IPA is It presents itself as the UK government's center of expertise on infrastructure and major projects . The purpose of the IPA is to continue to improve the way the UK government delivers infrastructure and major projects. IPA pursues world-class policy delivery.

The IPA provides a structured program for review, guidance, advice and support for PFI projects within 7 years of termination (Njamfa, Beatty, Cundall and Marshall , 2023).

The IPA is the center of government reporting to the Cabinet Office and the UK Treasury. IPA's core team includes infrastructure, project delivery and project finance experts working with government departments and industry.

IPA supports the successful outcome of all types of infrastructure and major large projects. They range from railroads, schools, hospitals and housing to defense, IT and major transformation programs. IPA leads project delivery and project finance professionals across government.

The IPA acts as the home for all project delivery functions in the UK Government, helping government deliver projects better and providing civil servants with specialist project delivery skills. Project delivery functions are part of a wider community of other functions in government, such as commerce, telecommunications and digital.

IPA supports the development capacity of all government departments. Provide standardized processes and measure performance to lead to excellence. Provides

expert knowledge in project delivery and project finance. We also provide independent guarantees for the project, eliminating project risks. IPA operates with two core functional principles: the first is to retain expert knowledge, and the second is to support projects in collaboration with government departments.

IPA works in a matrix model with a team of diverse experts. Experts work with government and industry to support projects and improve project delivery systems, the operating environment in which governments work to initiate and execute projects successfully. Most IPA activities are provided by teams drawn from across the IPA. Responsibility for the quality and nature of advice is horizontal across specialties. Resource priorities are driven vertically through the Heads of Infrastructure, Enterprise and Growth, Public and Security Services and their respective Deputy Directors.

Independent assurance is coordinated separately from excellence advice in project delivery through the strategy, performance and assurance teams. Based on machine learning through assurance and performance and benchmarking data, IPA helps set strategic direction for projects and infrastructure delivery.

The finance team provides project finance advice when requested by the department, provides ongoing portfolio management, advises on PPPs, and advises on international affairs. (IPA, 2020)

National Infrastructure Commission (NIC)

According to the National Infrastructure Commission Framework Document (HM Treasury and NIC, 2021), the purpose, role, and organization of NIC are as follows.

The NIC was established in January 2017 as the HM Treasury's executive organization. NIC conducts its work following the mandate and terms of commission for specific research set by the government.

However, the NIC reserves the right to make independent decisions regarding the content of its reports and public statements, as well as its work programs, methodologies, and recommendations. The purpose of the NIC establishment is as follows. First, it supports sustainable economic growth throughout the UK. Second, it improves economic power. Third, it improves the quality of life. Fourth, it supports climate resilience and the transition to zero carbon emissions by 2025.

The Commission provides advice to the Government on all areas of economic infrastructure. These areas include energy, transport, water and wastewater management, waste, flood risk management, and digital communications. The Commission also considers recommendations for infrastructure and housing, as well as the Government's goal of preventing biodiversity loss by 2030. Three main tasks are performed to perform this role. First, each Congress submits its NIA submissions. Key infrastructure requirements and advice to the government. Second, we conduct specific research on emergency infrastructure problems and tasks. Third, prepare an annual monitoring report to ensure that the government is properly implementing NIC recommendations.

These contents are included in the Framework Document, and besides this, they are specified in the ' Charter ', which is the agreement between the government and the Commission to establish each responsibility. For the Commission to consider the Government's overall policy priorities and to prioritize its recommendations, the Government issues to the Commission a document of its remit, including binding fiscal remit, at each Parliamentary session. The NIC must make sure that recommendations are consistent and prioritized within their privileges.

The committee's purpose, key outputs, responsibilities and obligations are embark in its charter and associated primary documents, which together protect the committee's discretion over its program of work and the independence of its reports and recommendations. The Charter also regulates the balance of responsibilities between the government and the Commission. The government provides clear guidance on the NIC as an official document.

The Commission's operational independence is key to the credibility of its advice and the effective delivery of accountability. To support this, we want to perform our duties objectively, transparently and fairly.

The NIC makes recommendations to government and other relevant agencies through specified studies. Advices should be strong, well-substantiated and prioritized in accordandce with the mandate of the NIC, with rightful treatment consideration of the various proposals. In making recommendations, NIC should consider the role of infrastructure providers and economic regulators. If the recommendations apply to governments or other relevant authorities, they must be explicitly stated.

The HM Treasury will submit NIC's report to parliament and react to NIC's national infrastructure assessment and specific research. The government will act as soon as possible. Respond within 6 months and not exceed 1 year. Actions should clearly outline the additional steps required to advance the committee's recommendations. Committee recommendations that the government agrees to promote are 'endorsed recommendations'. If the government disagrees with the committee's recommendation, it must explain the reasons for its disagreement and may submit alternatives. Where the government is account for carrying out the approved recommendations, the government's approval becomes a formal document of government policy.

The committee operates openly and transparently manner. It is necessary to build consensus on recommendations and engage stakeholders, the public sector, policy makers, experts of infrastructure and related institutions. NIC does not overturn any program or task decisions made.

The NIC's remit may extend from UK government mandates to economic infrastructure and may be developed upon transfer agreements. This intend that the NIC has a capacity about non-transferable infrastructure powers of the UK government in Scotland, Wales and Northern Ireland and all sectors of England.

The NIC works closely with the devolved administrations belonging to its jurisdiction. In particular, it may intervene in matters of cooperation between the UK government and the delegated administration.

The NIC's chairperson has the occasion to gather with the Treasury Secretary at the minimum twice a year. The support team within HM Treasury advises the Secretary

of the HM Treasury on carrying out Treasury's responsibilities to the NIC and is the main crux of reach with the NIC. The HM Treasury supporting team also supports the work of the Treasury's chief treasurer.

The Charter states that the government must pool related information with the NIC and behave on requests by the NIC to carry out its duties. Government departments must provide the NIC with an estimate of the cost of providing the analysis, which should be included in the NIC's annual report.

The NIC agrees on an information exchange process with economic modulator and other organizations and may enter into formal agreements, for example memorandums of understanding, where necessary.

The NIC is responsible for assessing the national infrastructure. This committee provides advice to the government within the scope of duties established by the government. It is also responsible for the analyses quality and recommendations the NIC conducts and the way public funds are used. The NIC will grip government agencies accountable for implementing its recommendations.

Policy-making is the obligation of the government, and the minister is accountable for making decisions about infrastructure policy and provision. The Secretary of the Treasury has independent accountability for determine whether to approve the NIC's recommendations and deciding the way the policy is adopted.

NIC is part of the HM Treasury Group organization. The Secretary of the Treasury is responsible for explaining the work of the NIC to Parliament, some or all of which may be delegated to the Minister of Finance. HM Treasury is responsible for submitting NIC's reports, annual reports and state to Parliament.

The NIC chairperson has unique responsibilities as chairperson. There is a duty to ensure the independence of the Committee's strategic leadership, priority decisions and recommendations. Oversees the work of NIA, including the preparation of annual monitoring reports.

Direct opinions to other members and utilize their skills, experience and expertise. Represent NIC publicly, including the media and public places. It also consults with the Minister of Finance on the balance of committee functions.

NIC's commissioners provide expert and impartial advice to governments on infrastructure. Conducts specific studies with the NIA in collaboration with the Chair and other members. Supports the Chairperson in constituting the NIC publicly, inclusive of to the media and at public places, on issues on which the Members have individual expertise. Always comply with the Code of Practice and the ' Strength of Conduct for Board Members of Public Agencies', inclusive of rules relating to the use of public funds and conflicts of interest. The committee members are supported by about 40 people who work in the secretariat and are composed of public officials such as economists and policy chiefs and dispatched from industries(HM Treasury, 2021; NIC, 2023).

name of Institution	Established year	Parent Department	organizational structure	chief decision-maker	location	The main business
PI	1977.01	The Department for Leveling UP, Housing and Communities	Planning Inspectorate Board (Advisory); Chief Executive Officer (Accountable Officer)	CE O (Paul Morrison)	Bristol	-Planning Appeals Review -Ensuring a fair planning system -Examining applications for NSIPs -Supporting communities to shape where they live *Within England and Wales
IPA	2016.01	Cabinet Office, HM Treasury	CEO	CEO (Nick Smallwood)	London	Government Major Projects Portfolio (GMPP) management and support -Reporting to the Cabinet Office and HM Treasury as a professional organization on GMPP -PFI Center operation
NIC	2017.01	HM Treasury	The Commission, The Oversight Board, CEO+staff(Supporting the Commission)	The Chair of the Commission (Sir John Armit)	London	*Nationwide
UKIB	2021.06	HM Treasury	Senior Team, -- Non-executive Directors	CEO (John Flint)	Leeds (HQ), London	Responding to climate change and supporting regional growth by attracting infrastructure investment

Table 3 Infrastructure in operation by the UK government Comparison of development public-private partnerships (By Author, 2023)

Current Status and Problems in Korea

Public land development system and current status in South Korea

After trust development was introduced in 1994, consignment development in 2005, fund development in 2011, and private participation development were introduced in the order of development in Korea. Among the four methods, fund development and consignment development were mainly used.

'Fund Development', the Ministry of Strategy and Finance (Fund Office) oversees development projects in the development of funds for the construction of public buildings, etc., with financial resources from the State Property Management Fund. Profits from development are settled after the collection of principal and interest is completed through post-completion operations, and generated development profits are returned to the state-owned property management fund, and Korea Asset Management Corporation, the trustee of the fund, receives only commissions. In this method, the state bears all risks before and after completion, and the ownership of the building after development also belongs to the state.

'Trust development' is a method of entrusting the development of state-owned property to a trust company that handles real estate trusts for general property (annotation). Instead of selling state-owned land, the government-owned land is trusted to a trust company, developed, and the profits are distributed. The business expenses of the trust business are settled as of the end of each year, and the remaining profits go to the government. During the trust period, the trust company bears the risk and the ownership of the asset is entrusted, however after the trust

period expires, the trust for the property is terminated and the ownership reverts to the state.

'Consignment development ' is a development by a designated consignee in accordance with the State Property Act, and unlike other methods, not only building development however also land development is allowed in consignment development. After the consignee prepares a project plan, the general administration reviews the appropriateness of the project, and after deliberation by the State Property Policy Deliberation Committee, the project is approved, and the project proceeds. The trustee procures the funds on its own, then recovers the funds through management and operation, and the profits generated thereafter are returned to the state-owned property management fund. Risks before and after completion are borne by the trustee, and public rights after completion of development are maintained by the state in the case of building development. The land is owned by the public, except when it is sold.

In the private sector development, an SPV is jointly established by the general administration and a private business entity, or the general property is developed jointly with a private business entity by investing in an asset management company. The Comprehensive Department establishes a basic plan for private sector development projects, openly recruits private businesses, and contracts according to negotiations. Profits from development are distributed according to the shares invested at the time of SPV establishment. The risk of the development project is borne by the SPV, and since state land is allotted to the SPV in the development with private participation, the ownership of the land belongs to the SPV, and depending on the project, some facilities can be owned by the state.

Division		Fund development	Trust development	Consignment development	Private sector development
Business operator		Consignment agency	Trust company	Consignment agency	SPV
Financing		State Property Management Fund	Trust company	Consignment agency	SPV
Cost of business implementation		Development fee	Trust fee	Development fee	dividend income
Source of revenue		Rental income	Rental income	Rental income	dividend income
Revenue attribution		Nation	Nation	Nation	Distributed according to shares
Risk	Before completion	Nation	Trust company	Consignment agency	SPV
	after completion	Nation	Trust period : trust company End of Trust: State	Nation	SPV
Land ownership		Nation	Trust period : trust company End of Trust: State	Nation (Except for sale)	SPV
Business period		No limit	Sales type within 5 years Lease type Within 30 years	Within 30 years	No limit
Case (as of 2022.11)		13 cases	1 case	37 cases	No exist

Table 4 Comparison between state-owned land development methods (Kim, 2018)

The Korean public land development process

The Ministry of Strategy and Finance oversees the management and disposition of transit and state land in Korea. In order to actively utilize state-owned property, the Ministry of Strategy and Finance is actively promoting the use of state-owned land by

allowing land development by allowing fund development, trust development, consignment development, and development with private participation. However, various problems that arise in the process of state-owned land development projects have caused problems such as delayed or canceled projects, and efforts are being made to improve the system. Korea's state-owned land development projects have problems such as the rigidity of the development method, the complexity of the project approval process, and the accumulation of expertise. The main problems of each stage of the project are as follows.

At the business planning stage, there are four main problems as follows;

- Absence of long-term plans for state-owned development projects; Currently, the national property comprehensive plan based on the ' State Property Act ' stipulates the development plan according to Article 57 of the Act, however it is only an action plan for a single development project, and there is no long-term development plan, so long-term social change Therefore, there is a need for a national land utilization and development plan that can respond to this.
- Restrictions on development projects due to restrictions on entrusted organizations; Currently, the state-owned land development project is ' fund development (add comments) ' ' Korea Asset Management Corporation ' is implementing, and ' consignment development (insert comment) ' is being carried out by Korea Asset Management Corporation or Korea Land and Housing Corporation under the consignment of the General

Administration, and there are restrictions on the development method depending on the expertise of each organization.

- Difficulty discovering properties subject to development due to development limited to general property (annotated); South Korea public land that is allowed to be developed under the ' State Property Act ' is limited to general property or property that has not been utilized for more than 5 years among general properties, making it difficult to find state property that can be developed.
- Delay in project due to absence of prior consultation body; During the project process, there are problems with the development project being delayed due to changes in public officials and strong local complaints during consultation with development permit holders (mainly local governments) and the local community.

There are two main problems at the project approval stage.

- A gap between the preliminary feasibility study and the state-owned development project: The target of the feasibility study for the state-owned development project differs depending on the level of public property input, however it is difficult to evaluate the feasibility of the state-owned development project with existing items, so the preliminary feasibility study is suitable for the state-owned land developer. It is necessary to adjust my items or to conduct an analysis suitable for land development

and building development in the case of a public institution's preliminary feasibility study.

- Unlike other development projects, project delays due to complicated procedures requiring approval twice were identified as issues; Unlike private development projects, state-owned development projects require development project approval from the general administration, and separate procedures such as adequacy review are required for development project approval.

The main problem in the project promotion stage is that there is no post-project evaluation system, so it is difficult to accumulate know-how. The State Property Act stipulates provisions related to post-evaluation of state-owned property development projects, however the standards are ambiguous and the utilization of evaluation results is not presented, so the effectiveness is insufficient (Sim, Lee and Kim, 2022).

On the other hand, it is pointed out that there is a limit to the development of land-based buildings because the use of state land is limited to buildings, and conflicts arise due to complicated interests between the central government, local governments and public institutions. It is also pointed out that no system can do this (Kim, 2018).

The necessity of actively introducing public-private cooperation in public land development in Korea

The process of urban growth in Seoul, Korea has different characteristics from other large cities. Since urbanization in large foreign cities progressed at a slow pace, the supply of public infrastructure was also made over a long period. However, as Seoul went through a compressed growth period, public infrastructure was also supplied intensively in a short period. It can be said that the durability period of public infrastructure is also approaching all at once, and we are facing the problem of aging public infrastructure.

As Korea rapidly enters an aging society, demand for public infrastructure in new fields such as welfare and culture is also rapidly increasing. Moreover, as the country enters a low-growth period, tax revenues from local governments decrease while financial demand related to welfare rapidly increases, making it more and more difficult to secure financial inputs for new investments in public infrastructure. It is expected that there will be many difficulties such as an increase in repair costs due to aging infrastructure, a decrease in tax revenue due to the economic slowdown, and securing the budget necessary for new welfare demand.

Seoul's population has been gradually decreasing since the period of high growth, and it is difficult to secure sufficient finances to maintain the public infrastructure currently in use. At a time when welfare-related the budgets are increasing, it is not easy to secure public infrastructure maintenance the budgets, and the actual budget share is also decreasing.

Seoul, in its period of rapid growth, led Korea's economic growth. The expansion of Seoul's public infrastructure was carried out at the central government level, and the purpose of the public infrastructure policy was to connect the national transportation network with Seoul in order to expand and support Seoul's role. However, with the implementation of the local autonomy system in the 1990s, public infrastructure policies led by the central government shifted to focus on local governments. In particular, as public finances weakened after the IMF financial crisis, public infrastructure policies led by the public sector could no longer be sustained.

In addition, the recent low-growth trend and rapid progress in population aging are bringing new changes in demand for public infrastructure. Performance deterioration and safety issues are emerging due to the aging of existing public infrastructure, and new demand for welfare and cultural infrastructure is leading to increased demand for public finance.

Accordingly, in a situation where public finances are weakening due to a decrease in tax revenue due to the economic slowdown, there is a need to seek a new transition in public-led infrastructure supply policy. While the government's financial situation cannot support both the safety and welfare of citizens, measures to actively utilize the vitality of the private sector should be considered. There is an emerging need to move away from the public-led public infrastructure supply policy of the past and seek ways to share roles between the public and private sectors.

Conclusion

This study broadly explored the UK's infrastructure development PPP organization and PFI system with the purpose of deriving implications for strengthening Korea's public land development capabilities. From the Planning Inspectorate to the UK Infrastructure Bank, the UK government recognizes the importance of PPPs. Instead of adhering to the government's independent position, it accepted opinions from the private sector and cooperated. The fact that such a consistent policy is being pursued over time can be said to have significant implications for the development of public land in Korea. In addition, in implementing the PFI system, it can be said that it is also meaningful to create a basis for attracting surplus private funds into the public sector, supplementing public finances, and supplying infrastructure at an appropriate time. In this chapter, we propose ways to strengthen the implementation of public land development in Korea.

Improving the system for public land development

First, there must be a comprehensive and long-term national infrastructure plan that encompasses the entire country. Selection of areas requiring infrastructure, priorities for financial investment, and optimal business methods may be included in this plan. This plan must be established jointly by the central and local governments, and must also reflect the opinions of the local community.

Second, the system must be reorganized to expand PPP development. Currently, the development of buildings on public land is mainly carried out in two ways: fund development involving public enterprises and consignment development. However,

there is a need to expand the PPP development method to the development of buildings within the city. This is because, unlike in the West, Korean cities have developed very rapidly during a period of intensive infrastructure, and as infrastructure has been supplied intensively, there is a problem of facility deterioration coming almost at the same time.

The third is the establishment of a post-evaluation system for infrastructure projects. Development projects require long-term expertise in various fields. The reason for adopting PPP development is not only because of the lack of public finance, but also because PPP development is more cost-effective and supply-time efficient than direct public development. However, because development projects are long-term, lasting more than 25 years, a solid post-evaluation system is projects projects necessary. This is related to the lack of expertise of public officials and the establishment of a dedicated infrastructure organization.

Establishment of an organization with expertise and coordination authority

This study previously looked at how rising project costs and delays due to public officials' lack of expertise in development projects was one of the reasons why the PFI system first appeared. Development projects are areas that have a long-term project period and require intensive specialized knowledge and skills such as finance accounting, development, architecture, civil engineering, regional development, and conflict resolution. The dedicated organization should create an environment where experts in each field can pursue projects in a long-term and stable manner. There is

a need for an implementation organization like the UK's IPA that supports development projects in a matrix manner with experts.

Additionally, the role of this organization is to prevent infrastructure development from being delayed due to conflicts of interest. An organization with the authority to mediate conflict of opinion among central government, local governments, public institutions, and local communities is needed. This organization will also need to be assured of independent activity, like the NIC in the UK.

Except for the Planning Inspectorate, all PPP organizations reviewed in this study were established by HM Treasury. The reason that HM Treasury establishes and operates these organizations is because infrastructure development is economically significant to the country. The reason why these organizational changes are meaningful to Korea is because they have continuously developed according to socioeconomic conditions and project operation experience. It can be said that the PPP and PFI were born from the Conservative Party, however the Labor government did not attack and abolish them as the policies of the opposition party. This may have been because it was a practical policy for the country and the people.

In the case of the UK, which has a lot of experience in operating PPP projects, the principle of success and failure is to exclude from private sector projects in the IT sector that have a high risk of failure and difficulty in securing efficiency, or projects that require continuous expansion and supplementation of facilities according to technological progress. We are improving the system through case analysis. A more fundamental way to solve the problem is to conduct an in-depth analysis of failure cases and reexamine the standards and principles for selecting areas for domestic private investment projects.

Fortunately, in South Korea, the need for advancement of national infrastructure policy has recently emerged (Kim, 2023). The Ministry of Economy and Finance, the general management agency for public-owned land, is also preparing a plan to use public land together with local governments in response to the steady demands of local governments (Ministry of Economy and Finance, 2023). Both the private and public sectors are recognizing the need in their respective positions and are coming up with ways to improve infrastructure development.

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